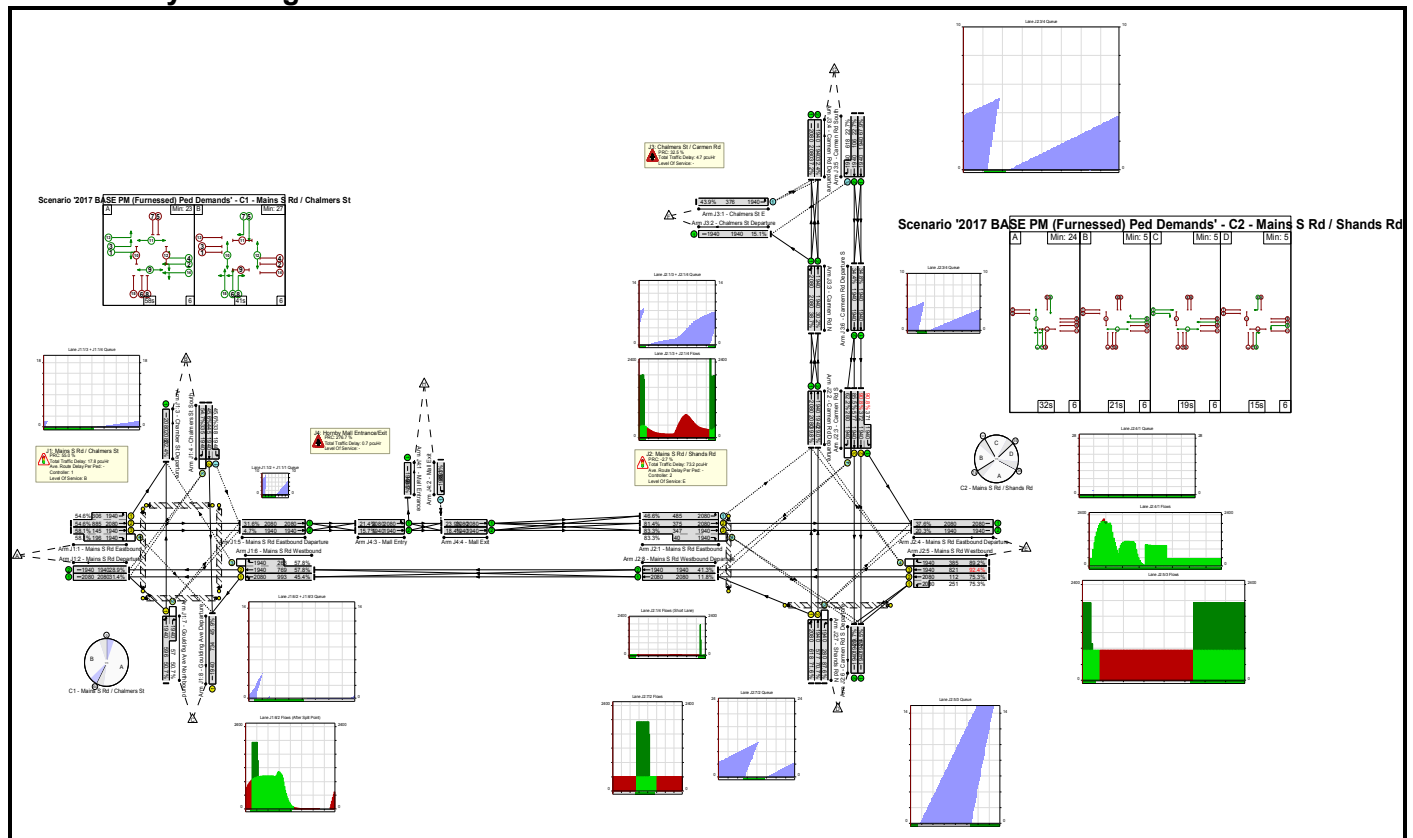


Appendix A  
**Appendix A**

**User and Project Details**

<b>Project:</b>	
<b>Title:</b>	
<b>Location:</b>	
<b>Additional detail:</b>	
<b>File name:</b>	Denton Park - Hornby Mall - 111 Cycle Time PM Peak Flow OPT (Updated 4-04-18) .lsg3x
<b>Author:</b>	
<b>Company:</b>	
<b>Address:</b>	

**Scenario 1: '2017 BASE PM (Furnished) Ped Demands' (FG1: '2017 Base PM', Plan 1: 'Plan 1 - Ped Demands')  
 Network Layout Diagram**



Appendix A  
**Network Results**

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	<b>92.4%</b>	<b>1096</b>	<b>1000</b>	<b>14</b>	<b>96.4</b>	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	<b>58.1%</b>	<b>498</b>	<b>134</b>	<b>0</b>	<b>17.8</b>	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	58:52	52	650	2080:1940	885+306	54.6 : 54.6%	-	-	-	3.5	19.4	10.0
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	58	-	198	1940:1940	145+196	58.1 : 58.1%	56	58	0	1.7	31.6	2.4
2/1	Mains S Rd Departure	U	-		-	-	-	653	2080	2080	31.4%	-	-	-	0.2	1.3	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	560	1940	1940	28.9%	-	-	-	0.2	1.3	0.2
3/1	Chamber St Departure	U	-		-	-	-	466	2080	2080	22.4%	-	-	-	0.1	1.1	0.1
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	41	-	357	1940:1940	445+338	45.6 : 45.6%	147	7	0	2.1	21.4	6.9
4/3	Chalmers St South Right	O	C1:7		1	41	-	183	1940	335	54.7%	113	70	0	2.2	42.5	4.5
5/1	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	658	2080	2080	31.6%	-	-	-	0.2	1.3	3.2
5/2	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	92	1940	1940	4.7%	-	-	-	0.0	1.0	0.0
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	52	52	451	2080	993	45.4%	-	-	-	1.1	8.6	5.8
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	52	-	596	1940:1940	769+263	57.8 : 57.8%	152	0	0	1.2	7.3	4.6

Appendix A

7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	35:41	35	331	1940:1940	596+57	50.7 : 50.7%	29	0	0	3.3	35.4	8.1
8/1	Goulding Ave Departure	U	C1:5		1	41	-	337	1940	734	45.9%	-	-	-	1.9	20.3	7.0
Ped Link: P1	Mains S Rd	-	C1:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Chalmers St Crossing	-	C1:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Goulding Ave	-	C1:9		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>92.4%</b>	<b>142</b>	<b>865</b>	<b>14</b>	<b>73.2</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	226	2080	485	46.6%	109	117	0	0.6	10.2	3.4
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	19	-	305	2080	375	81.4%	-	-	-	5.2	61.7	11.1
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	19	-	322	1940:1940	347+40	83.3 : 83.3%	33	0	0	5.6	62.8	10.8
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	827	2080	2080	39.8%	-	-	-	0.4	1.6	7.4
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	563	1940	1940	29.0%	-	-	-	0.2	1.3	0.2
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	32	-	675	1940:1940	372+371	90.8 : 90.8%	-	-	-	8.4	44.7	19.1
3/3	Carmen Rd S Ahead	U	C2:6		1	32	-	493	1940	577	85.5%	-	-	-	7.8	56.9	17.0
3/4	Carmen Rd S Right	O	C2:8		1	15	-	174	1940	280	62.2%	0	171	3	3.0	61.5	5.8
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	783	2080	2080	37.6%	-	-	-	0.3	1.4	3.2

Appendix A

4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	393	1940	1940	20.3%	-	-	-	0.1	1.2	0.1	
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	46:15	0	273	2080:2080	112+251	75.3 : 75.3%	-	-	-	4.7	61.5	7.9
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	46	-	759	1940	821	92.4%	-	-	-	11.6	55.0	27.3
5/4	Mains S Rd Westbound Right	O	C2:5		1	21	-	343	1940	385	89.2%	0	337	6	7.7	80.4	13.8
6/1	Carmen Rd S Departure	U	-		-	-	-	476	1940	1940	24.5%	-	-	-	0.2	1.2	0.2
6/2	Carmen Rd S Departure	U	-		-	-	-	577	1940	1940	29.7%	-	-	-	0.2	1.3	0.2
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	32	26	443	2080	618	71.6%	-	-	-	5.5	44.9	13.4
7/2	Shands Rd N Ahead	U	C2:7		1	32	-	408	1940	577	70.7%	-	-	-	5.1	45.2	12.3
7/3	Shands Rd N Right	O	C2:9		1	15	-	245	1940	280	87.6%	0	241	4	6.2	90.8	10.4
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	246	2080	2080	11.8%	-	-	-	0.1	1.0	0.1
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	801	1940	1940	41.3%	-	-	-	0.4	1.6	0.4
Ped Link: P1	Shands Rd	-	C2:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Mains S Rd	-	C2:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>67.9%</b>	<b>305</b>	<b>0</b>	<b>0</b>	<b>4.7</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	165	1940	376	43.9%	165	0	0	1.2	25.7	3.6
2/1	Chalmers St Departure	U	-		-	-	-	292	1940	1940	15.1%	-	-	-	0.1	1.1	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	804	2080	2080	38.7%	-	-	-	0.3	1.4	0.3

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3/2	Carmen Rd N Ahead	U	-	-	-	-	586	1940	1940	30.2%	-	-	-	0.2	1.5	8.9
4/1	Carmen Rd Departure	U	-	-	-	-	774	2080	2080	37.2%	-	-	-	0.3	1.4	0.3
4/2	Carmen Rd Departure	U	-	-	-	-	629	1940	1940	32.4%	-	-	-	0.2	1.4	5.1
5/1	Carmen Rd South Ahead	U	-	-	-	-	1318	1940	1940	67.9%	-	-	-	1.1	2.9	1.1
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	164	1940:1940	106+618	22.7 : 22.7%	140	0	0	0.8	16.5	2.6
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	675	1940	1940	34.8%	-	-	-	0.3	1.4	0.3
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	667	1940	1940	34.4%	-	-	-	0.3	1.4	0.3
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>23.9%</b>	<b>152</b>	<b>0</b>	<b>0</b>	<b>0.7</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	49	1940	1940	2.5%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	152	1940	651	23.3%	152	0	0	0.2	3.6	0.2
3/1	Mall Entry Left Ahead	U	-	-	-	-	445	2080	2080	21.4%	-	-	-	0.1	1.1	0.1
3/2	Mall Entry Ahead	U	-	-	-	-	305	1940	1940	15.7%	-	-	-	0.1	1.1	0.1
4/1	Mall Exit Ahead	U	-	-	-	-	497	2080	2080	23.9%	-	-	-	0.2	1.1	0.2
4/2	Mall Exit Ahead	U	-	-	-	-	356	1940	1940	18.4%	-	-	-	0.1	1.1	0.1
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		55.0		Total Delay for Signalled Lanes (pcuHr):		16.97		Cycle Time (s):		111				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		-2.7		Total Delay for Signalled Lanes (pcuHr):		70.75		Cycle Time (s):		111				
		PRC Over All Lanes (%):		-2.7		Total Delay Over All Lanes(pcuHr):		96.37								

## Appendix A

**Network Summary**

<b>Controller</b>	<b>Stream</b>	<b>PRC (%)</b>	<b>Total Delay for stream (pcuHr)</b>
C1 - Mains S Rd / Chalmers St	1	55.01	16.97
C2 - Mains S Rd / Shands Rd	1	-2.67	70.75
<b>Total Network Delay:</b> 96.37 pcuHr			
<b>Worst PRC:</b> -2.67 % (On Lane J2:5/3 in Stream 1)			
<b>Level Of Service:</b> D			

Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead Arm J1:8 Left	Inf Inf	95.6 % 4.4 %	2080	2080
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:2 Left Arm J1:3 Ahead	Inf Inf	51.3 % 48.7 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

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Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead Arm J2:8 Left	Inf Inf	93.2 % 6.8 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080



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J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	18.9 % 81.1 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	11.0 % 89.0 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

Appendix A

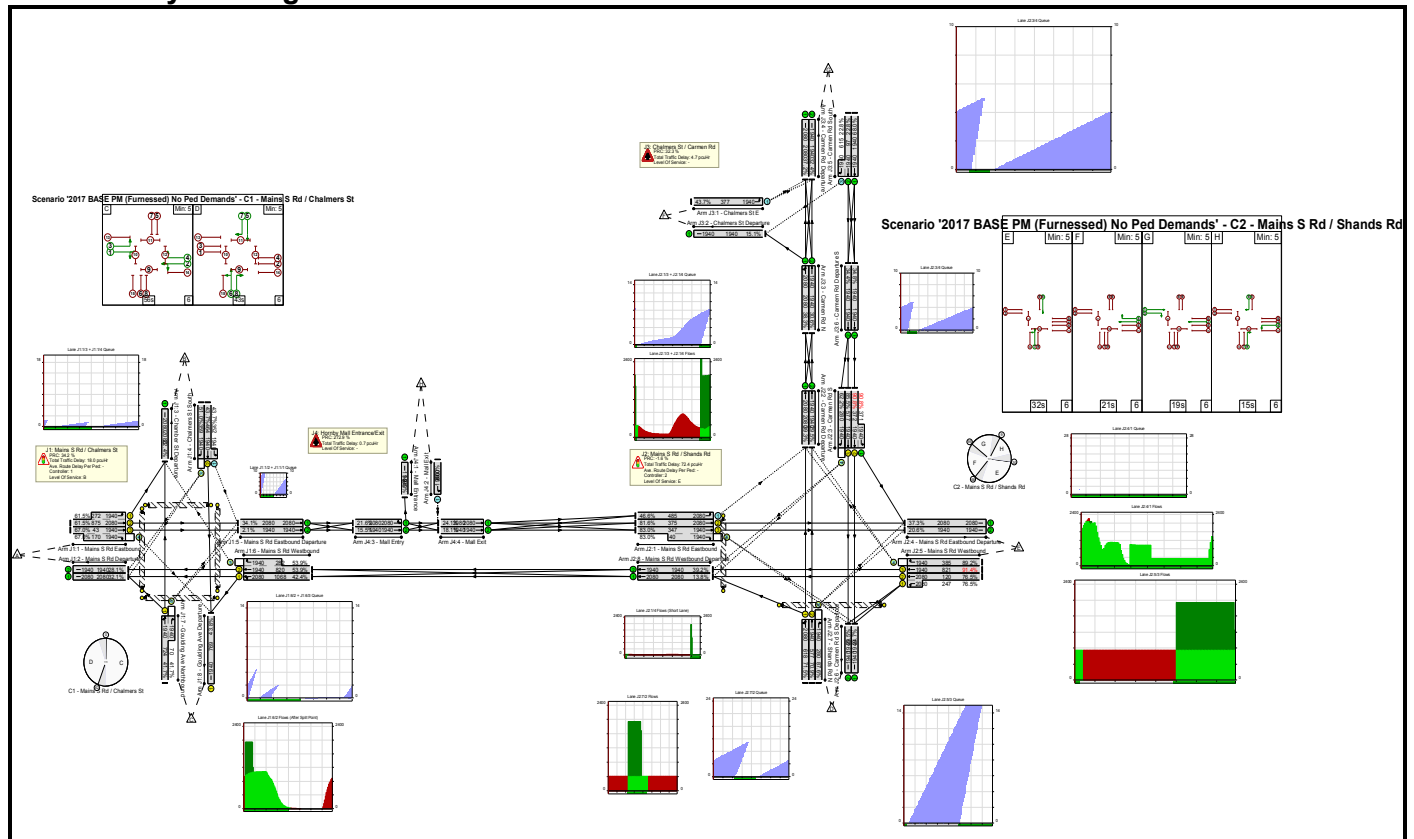
Travel Time Matrix, Delay Per PCU

Delay Per PCU :

	A	B	C	D	E	F	G	H
A	0.0	21.2	75.8	77.1	83.3	0.0	39.1	23.4
B	43.8	0.0	38.4	86.5	86.7	29.4	29.7	0.0
C	36.8	36.7	0.0	0.0	117.8	0.0	49.5	37.0
D	90.4	102.5	137.5	0.0	92.1	49.1	49.5	0.0
E	64.2	68.6	94.2	65.6	0.0	84.3	84.5	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	27.1	0.0
G	73.0	72.4	86.7	63.0	36.9	19.9	0.0	0.0
H	0.0	0.0	0.0	70.2	73.9	0.0	19.4	0.0

Scenario 2: '2017 BASE PM (Furnished) No Ped Demands' (FG1: '2017 Base PM', Plan 2: 'Plan 2 - No Ped Demands')

Network Layout Diagram



## Appendix A

## Network Results

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	<b>91.4%</b>	<b>1230</b>	<b>866</b>	<b>14</b>	<b>95.7</b>	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	<b>67.0%</b>	<b>625</b>	<b>7</b>	<b>0</b>	<b>18.0</b>	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	56	0	705	2080:1940	875+272	61.5 : 61.5%	-	-	-	4.2	21.3	12.9
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	56	-	143	1940:1940	43+170	67.0 : 67.0%	114	0	0	2.6	66.5	2.8
2/1	Mains S Rd Departure	U	-		-	-	-	667	2080	2080	32.1%	-	-	-	0.2	1.3	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	546	1940	1940	28.1%	-	-	-	0.2	1.3	0.2
3/1	Chamber St Departure	U	-		-	-	-	466	2080	2080	22.4%	-	-	-	0.1	1.1	0.1
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	43	-	357	1940:1940	464+352	43.7 : 43.7%	147	7	0	2.0	19.9	6.6
4/3	Chalmers St South Right	O	C1:7		1	43	-	183	1940	359	51.0%	183	0	0	2.3	44.3	5.0
5/1	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	710	2080	2080	34.1%	-	-	-	0.3	1.3	4.9
5/2	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	40	1940	1940	2.1%	-	-	-	0.0	0.9	0.0
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	56	0	453	2080	1068	42.4%	-	-	-	1.0	7.6	5.2
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	56	-	594	1940:1940	820+282	53.9 : 53.9%	152	0	0	1.5	9.1	5.5

Appendix A

7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	43	0	331	1940:1940	724+70	41.7 : 41.7%	29	0	0	2.6	28.0	7.1
8/1	Goulding Ave Departure	U	C1:5		1	43	-	337	1940	769	43.8%	-	-	-	1.1	11.6	6.9
Ped Link: P1	Mains S Rd	-	C1:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Chalmers St Crossing	-	C1:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P4	Goulding Ave	-	C1:9		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>91.4%</b>	<b>148</b>	<b>859</b>	<b>14</b>	<b>72.4</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	226	2080	485	46.6%	115	111	0	0.6	8.9	2.4
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	19	-	306	2080	375	81.6%	-	-	-	5.2	61.0	11.0
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	19	-	321	1940:1940	347+40	83.0 : 83.0%	33	0	0	5.4	60.3	10.7
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	817	2080	2080	39.3%	-	-	-	0.4	1.6	7.4
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	573	1940	1940	29.5%	-	-	-	0.2	1.3	0.2
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	32	-	675	1940:1940	372+371	90.8 : 90.8%	-	-	-	8.4	44.7	19.1
3/3	Carmen Rd S Ahead	U	C2:6		1	32	-	493	1940	577	85.5%	-	-	-	7.8	56.9	17.0
3/4	Carmen Rd S Right	O	C2:8		1	15	-	174	1940	280	62.2%	0	171	3	3.0	61.5	5.8
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	776	2080	2080	37.3%	-	-	-	0.3	1.4	3.2

Appendix A

4/2	Mains S Rd Eastbound Departure	U	-		-	-	-	400	1940	1940	20.6%	-	-	-	0.1	1.2	0.1
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	46:15	0	281	2080:2080	120+247	76.5 : 76.5%	-	-	-	4.8	62.0	8.1
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	46	-	751	1940	821	91.4%	-	-	-	11.0	52.6	26.4
5/4	Mains S Rd Westbound Right	O	C2:5		1	21	-	343	1940	385	89.2%	0	337	6	7.7	80.4	13.8
6/1	Carmen Rd S Departure	U	-		-	-	-	480	1940	1940	24.7%	-	-	-	0.2	1.2	0.2
6/2	Carmen Rd S Departure	U	-		-	-	-	573	1940	1940	29.5%	-	-	-	0.2	1.3	0.2
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	32	0	442	2080	618	71.5%	-	-	-	5.5	44.9	13.4
7/2	Shands Rd N Ahead	U	C2:7		1	32	-	409	1940	577	70.9%	-	-	-	5.1	45.3	12.3
7/3	Shands Rd N Right	O	C2:9		1	15	-	245	1940	280	87.6%	0	241	4	6.2	90.8	10.4
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	287	2080	2080	13.8%	-	-	-	0.1	1.0	0.1
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	760	1940	1940	39.2%	-	-	-	0.3	1.5	0.3
Ped Link: P1	Shands Rd	-	C2:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Mains S Rd	-	C2:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>68.0%</b>	<b>305</b>	<b>0</b>	<b>0</b>	<b>4.7</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	165	1940	377	43.7%	165	0	0	1.2	25.2	3.6
2/1	Chalmers St Departure	U	-		-	-	-	292	1940	1940	15.1%	-	-	-	0.1	1.1	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	796	2080	2080	38.3%	-	-	-	0.3	1.4	0.3

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3/2	Carmen Rd N Ahead	U	-	-	-	-	594	1940	1940	30.6%	-	-	-	0.2	1.4	7.3
4/1	Carmen Rd Departure	U	-	-	-	-	774	2080	2080	37.2%	-	-	-	0.3	1.4	0.3
4/2	Carmen Rd Departure	U	-	-	-	-	629	1940	1940	32.4%	-	-	-	0.2	1.4	3.5
5/1	Carmen Rd South Ahead	U	-	-	-	-	1320	1940	1940	68.0%	-	-	-	1.1	2.9	1.1
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	162	1940:1940	97+615	22.8 : 22.8%	140	0	0	0.8	16.7	2.6
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	675	1940	1940	34.8%	-	-	-	0.3	1.4	0.3
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	667	1940	1940	34.4%	-	-	-	0.3	1.4	0.3
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>24.1%</b>	<b>152</b>	<b>0</b>	<b>0</b>	<b>0.7</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	49	1940	1940	2.5%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	152	1940	660	23.0%	152	0	0	0.1	3.5	0.1
3/1	Mall Entry Left Ahead	U	-	-	-	-	450	2080	2080	21.6%	-	-	-	0.1	1.1	0.1
3/2	Mall Entry Ahead	U	-	-	-	-	300	1940	1940	15.5%	-	-	-	0.1	1.1	0.1
4/1	Mall Exit Ahead	U	-	-	-	-	502	2080	2080	24.1%	-	-	-	0.2	1.1	0.2
4/2	Mall Exit Ahead	U	-	-	-	-	351	1940	1940	18.1%	-	-	-	0.1	1.1	0.1
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		34.2		Total Delay for Signalled Lanes (pcuHr):		17.17		Cycle Time (s):		111				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		-1.6		Total Delay for Signalled Lanes (pcuHr):		70.03		Cycle Time (s):		111				
		PRC Over All Lanes (%):		-1.6		Total Delay Over All Lanes(pcuHr):		95.72								

## Appendix A

**Network Summary**

<b>Controller</b>	<b>Stream</b>	<b>PRC (%)</b>	<b>Total Delay for stream (pcuHr)</b>
C1 - Mains S Rd / Chalmers St	1	34.24	17.17
C2 - Mains S Rd / Shands Rd	1	-1.58	70.03
<b>Total Network Delay:</b> 95.72 pcuHr			
<b>Worst PRC:</b> -1.58 % (On Lane J2:5/3 in Stream 1)			
<b>Level Of Service:</b> D			

Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead Arm J1:8 Left	Inf Inf	95.6 % 4.4 %	2080	2080
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:2 Left Arm J1:3 Ahead	Inf Inf	51.3 % 48.7 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940



Appendix A

Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead Arm J2:8 Left	Inf Inf	93.2 % 6.8 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

Appendix A

J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	19.1 % 80.9 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	10.9 % 89.1 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

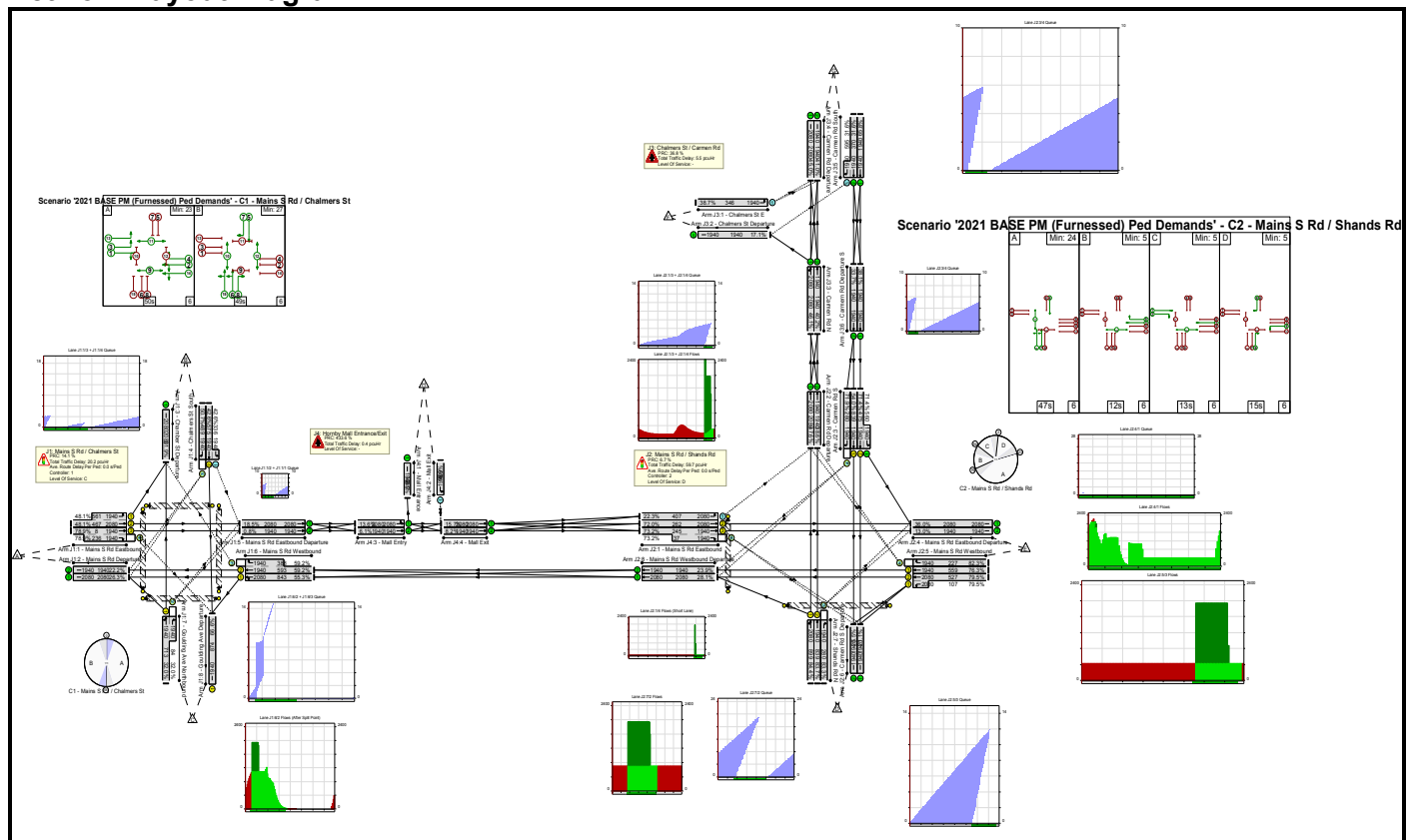
Appendix A

Travel Time Matrix, Delay Per PCU

Delay Per PCU :

	A	B	C	D	E	F	G	H
A	0.0	20.9	88.3	74.5	82.3	0.0	38.6	25.2
B	45.6	0.0	36.2	89.5	89.5	27.9	28.2	0.0
C	29.1	29.0	0.0	0.0	121.0	0.0	45.9	32.7
D	87.6	109.3	132.8	0.0	92.1	49.1	49.4	0.0
E	61.7	74.8	91.5	66.2	0.0	84.3	84.5	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	26.6	0.0
G	71.7	74.2	85.6	63.0	36.9	19.9	0.0	0.0
H	0.0	0.0	0.0	69.7	73.6	0.0	18.9	0.0

Scenario 3: '2021 BASE PM (Furnished) Ped Demands' (FG3: '2021 Base PM', Plan 1: 'Plan 1 - Ped Demands')  
Network Layout Diagram



Appendix A  
**Network Results**

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	84.4%	1223	794	11	85.7	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	78.9%	688	146	0	20.2	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	50:44	44	495	2080:1940	467+561	48.1 : 48.1%	-	-	-	3.3	24.1	6.2
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	50	-	192	1940:1940	8+236	78.9 : 78.9%	116	70	0	3.5	65.5	5.2
2/1	Mains S Rd Departure	U	-		-	-	-	548	2080	2080	26.3%	-	-	-	0.2	1.2	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	431	1940	1940	22.2%	-	-	-	0.1	1.2	0.1
3/1	Chamber St Departure	U	-		-	-	-	663	2080	2080	31.9%	-	-	-	0.3	1.9	9.6
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	49	-	388	1940:1940	575+336	42.6 : 42.6%	137	6	0	2.0	18.4	7.1
4/3	Chalmers St South Right	O	C1:7		1	49	-	248	1940	489	50.7%	178	70	0	2.2	32.2	6.2
5/1	Mains S Rd Eastbound Dapature Ahead	U	-		-	-	-	385	2080	2080	18.5%	-	-	-	0.1	1.1	0.1
5/2	Mains S Rd Eastbound Dapature Ahead	U	-		-	-	-	16	1940	1940	0.8%	-	-	-	0.0	0.9	0.0
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	44	44	466	2080	843	55.3%	-	-	-	0.8	6.6	5.9
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	44	-	581	1940:1940	593+388	59.2 : 59.2%	230	0	0	1.2	7.7	15.9

Appendix A

7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	43:49	43	255	1940:1940	713+84	32.0 : 32.0%	27	0	0	1.9	26.2	5.0
8/1	Goulding Ave Departure	U	C1:5		1	49	-	582	1940	874	66.6%	-	-	-	4.4	27.4	17.6
Ped Link: P1	Mains S Rd	-	C1:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Chalmers St Crossing	-	C1:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Goulding Ave	-	C1:9		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>84.4%</b>	<b>80</b>	<b>648</b>	<b>11</b>	<b>59.7</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	91	2080	407	22.3%	53	38	0	0.3	11.8	1.5
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	13	-	189	2080	262	72.0%	-	-	-	3.6	68.3	6.7
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	13	-	206	1940:1940	245+37	73.2 : 73.2%	27	0	0	3.8	66.3	6.5
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	990	2080	2080	47.6%	-	-	-	0.5	1.9	8.1
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	749	1940	1940	38.6%	-	-	-	0.3	1.5	0.3
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	47	-	739	1940:1940	475+560	71.4 : 71.4%	-	-	-	3.6	17.6	12.6
3/3	Carmen Rd S Ahead	U	C2:6		1	47	-	453	1940	839	54.0%	-	-	-	3.5	28.0	10.9
3/4	Carmen Rd S Right	O	C2:8		1	15	-	201	1940	280	71.9%	0	197	4	3.8	67.5	7.1
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	749	2080	2080	36.0%	-	-	-	0.3	1.4	2.1

## Appendix A

4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	252	1940	1940	13.0%	-	-	-	0.1	1.1	0.1	
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	31:15	0	504	2080:2080	527+107	79.5 : 79.5%	-	-	-	7.0	50.3	15.3
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	31	-	427	1940	559	76.3%	-	-	-	5.9	49.3	13.6
5/4	Mains S Rd Westbound Right	O	C2:5		1	12	-	187	1940	227	82.3%	0	184	3	4.6	88.4	7.7
6/1	Carmen Rd S Departure	U	-		-	-	-	410	1940	1940	21.1%	-	-	-	0.1	1.2	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	494	1940	1940	25.5%	-	-	-	0.2	1.2	0.2
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	47	41	759	2080	899	84.4%	-	-	-	8.5	40.5	23.5
7/2	Shands Rd N Ahead	U	C2:7		1	47	-	702	1940	839	83.7%	-	-	-	7.9	40.7	21.6
7/3	Shands Rd N Right	O	C2:9		1	15	-	233	1940	280	83.3%	0	229	4	5.3	81.4	9.2
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	584	2080	2080	28.1%	-	-	-	0.2	1.2	0.8
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	463	1940	1940	23.9%	-	-	-	0.2	1.2	0.2
Ped Link: P1	Shands Rd	-	C2:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Mains S Rd	-	C2:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>65.8%</b>	<b>322</b>	<b>0</b>	<b>0</b>	<b>5.5</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	134	1940	346	38.7%	134	0	0	1.1	28.3	3.0
2/1	Chalmers St Departure	U	-		-	-	-	331	1940	1940	17.1%	-	-	-	0.1	1.1	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	959	2080	2080	46.1%	-	-	-	0.4	1.6	0.4

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3/2	Carmen Rd N Ahead	U	-	-	-	-	780	1940	1940	40.2%	-	-	-	0.3	1.6	11.2
4/1	Carmen Rd Departure	U	-	-	-	-	935	2080	2080	45.0%	-	-	-	0.4	1.6	0.4
4/2	Carmen Rd Departure	U	-	-	-	-	795	1940	1940	41.0%	-	-	-	0.3	1.6	0.3
5/1	Carmen Rd South Ahead	U	-	-	-	-	1276	1940	1940	65.8%	-	-	-	1.0	2.7	1.0
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	305	1940:1940	370+595	31.6 : 31.6%	188	0	0	1.3	14.9	3.9
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	739	1940	1940	38.1%	-	-	-	0.3	1.5	0.3
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	654	1940	1940	33.7%	-	-	-	0.3	1.4	0.3
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>16.9%</b>	<b>133</b>	<b>0</b>	<b>0</b>	<b>0.4</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	48	1940	1940	2.5%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	133	1940	789	16.9%	133	0	0	0.1	2.7	0.1
3/1	Mall Entry Left Ahead	U	-	-	-	-	282	2080	2080	13.6%	-	-	-	0.1	1.0	0.1
3/2	Mall Entry Ahead	U	-	-	-	-	119	1940	1940	6.1%	-	-	-	0.0	1.0	0.0
4/1	Mall Exit Ahead	U	-	-	-	-	327	2080	2080	15.7%	-	-	-	0.1	1.0	0.1
4/2	Mall Exit Ahead	U	-	-	-	-	159	1940	1940	8.2%	-	-	-	0.0	1.0	0.0
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		14.1		Total Delay for Signalled Lanes (pcuHr):		19.38		Cycle Time (s):		111				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		6.7		Total Delay for Signalled Lanes (pcuHr):		57.53		Cycle Time (s):		111				
		PRC Over All Lanes (%):		6.7		Total Delay Over All Lanes(pcuHr):		85.66								

## Appendix A

**Network Summary**

<b>Controller</b>	<b>Stream</b>	<b>PRC (%)</b>	<b>Total Delay for stream (pcuHr)</b>
C1 - Mains S Rd / Chalmers St	1	14.10	19.38
C2 - Mains S Rd / Shands Rd	1	6.66	57.53
<b>Total Network Delay:</b> 85.66 pcuHr			
<b>Worst PRC:</b> 6.66 % (On Lane J2:7/1 in Stream 1)			
<b>Level Of Service:</b> D			



Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead Arm J1:8 Left	Inf Inf	67.6 % 32.4 %	2080	2080
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:2 Left Arm J1:3 Ahead	Inf Inf	28.5 % 71.5 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

## Appendix A

Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead Arm J2:8 Left	Inf Inf	100.0 % 0.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

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J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	14.9 % 85.1 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	17.0 % 83.0 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

Appendix A

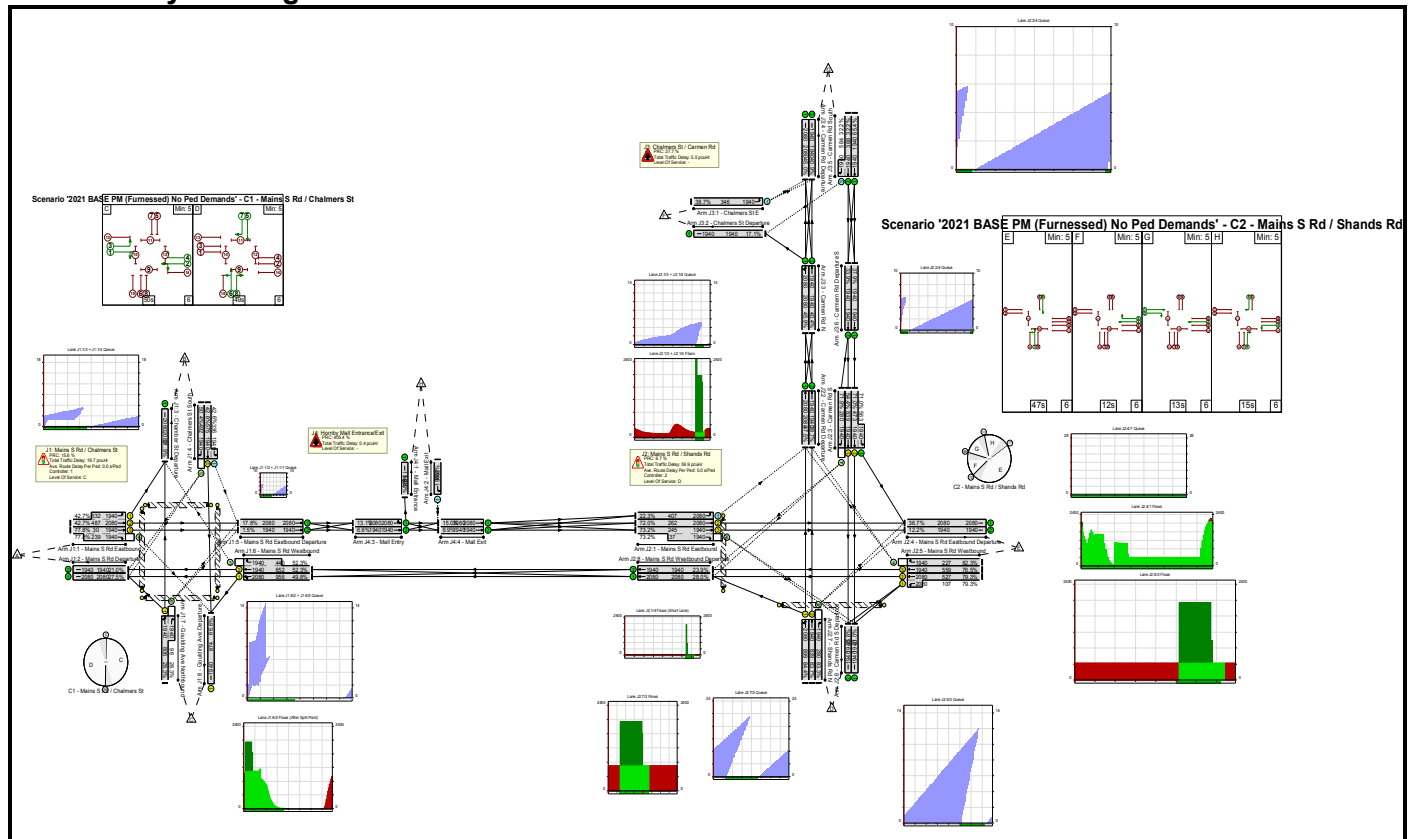
Travel Time Matrix, Delay Per PCU

Delay Per PCU :

	A	B	C	D	E	F	G	H
A	0.0	28.1	103.6	0.0	81.9	0.0	40.6	24.6
B	33.4	0.0	41.3	0.0	92.1	0.0	0.0	0.0
C	27.4	27.5	0.0	0.0	127.7	0.0	45.2	29.4
D	0.0	0.0	0.0	0.0	82.6	45.0	45.5	0.0
E	58.7	62.0	93.1	57.0	0.0	92.8	93.2	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	29.8	0.0
G	79.1	0.0	104.6	33.5	14.2	23.5	0.0	0.0
H	0.0	0.0	0.0	71.2	74.7	0.0	21.9	0.0

Scenario 4: '2021 BASE PM (Furnished) No Ped Demands' (FG3: '2021 Base PM', Plan 2: 'Plan 2 - No Ped Demands')

Network Layout Diagram



Appendix A  
**Network Results**

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	84.4%	1361	656	11	85.4	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	77.8%	828	6	0	19.7	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	50	0	478	2080:1940	487+632	42.7 : 42.7%	-	-	-	2.8	21.3	5.5
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	50	-	209	1940:1940	30+239	77.8 : 77.8%	186	0	0	4.2	71.9	7.1
2/1	Mains S Rd Departure	U	-		-	-	-	571	2080	2080	27.5%	-	-	-	0.2	1.2	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	408	1940	1940	21.0%	-	-	-	0.1	1.2	0.1
3/1	Chamber St Departure	U	-		-	-	-	663	2080	2080	31.9%	-	-	-	0.2	1.3	0.2
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	49	-	388	1940:1940	575+336	42.6 : 42.6%	137	6	0	2.0	18.4	7.1
4/3	Chalmers St South Right	O	C1:7		1	49	-	248	1940	492	50.4%	248	0	0	2.4	34.6	6.2
5/1	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	371	2080	2080	17.8%	-	-	-	0.1	1.1	0.1
5/2	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	30	1940	1940	1.5%	-	-	-	0.0	0.9	0.0
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	50	0	476	2080	956	49.8%	-	-	-	0.7	5.2	5.8
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	50	-	571	1940:1940	652+440	52.3 : 52.3%	230	0	0	1.4	8.6	15.3

Appendix A

7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	49	0	255	1940:1940	806+96	28.3 : 28.3%	27	0	0	1.6	22.2	4.6
8/1	Goulding Ave Departure	U	C1:5		1	49	-	582	1940	874	66.6%	-	-	-	4.0	24.7	17.6
Ped Link: P1	Mains S Rd	-	C1:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Chalmers St Crossing	-	C1:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P4	Goulding Ave	-	C1:9		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>84.4%</b>	<b>79</b>	<b>649</b>	<b>11</b>	<b>59.9</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	91	2080	407	22.3%	52	39	0	0.3	10.8	1.3
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	13	-	189	2080	262	72.0%	-	-	-	3.8	71.6	6.8
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	13	-	206	1940:1940	245+37	73.2 : 73.2%	27	0	0	3.9	68.6	6.6
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	988	2080	2080	47.5%	-	-	-	0.5	1.8	8.0
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	751	1940	1940	38.7%	-	-	-	0.3	1.5	0.3
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	47	-	736	1940:1940	473+563	71.0 : 71.0%	-	-	-	3.6	17.4	12.3
3/3	Carmen Rd S Ahead	U	C2:6		1	47	-	456	1940	839	54.4%	-	-	-	3.6	28.1	11.0
3/4	Carmen Rd S Right	O	C2:8		1	15	-	201	1940	280	71.9%	0	197	4	3.8	67.5	7.1
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	764	2080	2080	36.7%	-	-	-	0.3	1.4	2.1

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4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	237	1940	1940	12.2%	-	-	-	0.1	1.1	0.1	
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	31:15	0	503	2080:2080	527+107	79.3 : 79.3%	-	-	-	7.0	50.2	15.3
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	31	-	428	1940	559	76.5%	-	-	-	5.9	49.5	13.6
5/4	Mains S Rd Westbound Right	O	C2:5		1	12	-	187	1940	227	82.3%	0	184	3	4.6	88.4	7.7
6/1	Carmen Rd S Departure	U	-		-	-	-	407	1940	1940	21.0%	-	-	-	0.1	1.2	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	497	1940	1940	25.6%	-	-	-	0.2	1.2	0.2
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	47	0	759	2080	899	84.4%	-	-	-	8.5	40.5	23.5
7/2	Shands Rd N Ahead	U	C2:7		1	47	-	702	1940	839	83.7%	-	-	-	7.9	40.7	21.6
7/3	Shands Rd N Right	O	C2:9		1	15	-	233	1940	280	83.3%	0	229	4	5.3	81.4	9.2
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	583	2080	2080	28.0%	-	-	-	0.2	1.2	0.8
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	464	1940	1940	23.9%	-	-	-	0.2	1.2	0.2
Ped Link: P1	Shands Rd	-	C2:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Mains S Rd	-	C2:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>65.4%</b>	<b>322</b>	<b>0</b>	<b>0</b>	<b>5.5</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	134	1940	346	38.7%	134	0	0	1.1	28.3	3.0
2/1	Chalmers St Departure	U	-		-	-	-	331	1940	1940	17.1%	-	-	-	0.1	1.1	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	955	2080	2080	45.9%	-	-	-	0.4	1.6	0.4

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3/2	Carmen Rd N Ahead	U	-	-	-	-	784	1940	1940	40.4%	-	-	-	0.4	1.6	11.7
4/1	Carmen Rd Departure	U	-	-	-	-	936	2080	2080	45.0%	-	-	-	0.4	1.6	0.4
4/2	Carmen Rd Departure	U	-	-	-	-	794	1940	1940	40.9%	-	-	-	0.3	1.6	0.3
5/1	Carmen Rd South Ahead	U	-	-	-	-	1268	1940	1940	65.4%	-	-	-	0.9	2.7	0.9
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	313	1940:1940	388+584	32.2 : 32.2%	188	0	0	1.3	14.6	3.9
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	736	1940	1940	37.9%	-	-	-	0.3	1.5	0.3
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	657	1940	1940	33.9%	-	-	-	0.3	1.4	0.3
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>17.8%</b>	<b>133</b>	<b>0</b>	<b>0</b>	<b>0.4</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	48	1940	1940	2.5%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	133	1940	747	17.8%	133	0	0	0.1	2.9	0.1
3/1	Mall Entry Left Ahead	U	-	-	-	-	273	2080	2080	13.1%	-	-	-	0.1	1.0	0.1
3/2	Mall Entry Ahead	U	-	-	-	-	128	1940	1940	6.6%	-	-	-	0.0	1.0	0.0
4/1	Mall Exit Ahead	U	-	-	-	-	313	2080	2080	15.0%	-	-	-	0.1	1.0	0.1
4/2	Mall Exit Ahead	U	-	-	-	-	173	1940	1940	8.9%	-	-	-	0.0	1.0	0.0
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		15.6		Total Delay for Signalled Lanes (pcuHr):		18.98		Cycle Time (s):		111				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		6.7		Total Delay for Signalled Lanes (pcuHr):		57.80		Cycle Time (s):		111				
		PRC Over All Lanes (%):		6.7		Total Delay Over All Lanes(pcuHr):		85.40								



## Appendix A

**Network Summary**

<b>Controller</b>	<b>Stream</b>	<b>PRC (%)</b>	<b>Total Delay for stream (pcuHr)</b>
C1 - Mains S Rd / Chalmers St	1	15.61	18.98
C2 - Mains S Rd / Shands Rd	1	6.66	57.80
<b>Total Network Delay:</b> 85.40 pcuHr			
<b>Worst PRC:</b> 6.66 % (On Lane J2:7/1 in Stream 1)			
<b>Level Of Service:</b> D			

Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead Arm J1:8 Left	Inf Inf	68.3 % 31.7 %	2080	2080
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:2 Left Arm J1:3 Ahead	Inf Inf	28.5 % 71.5 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

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Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead Arm J2:8 Left	Inf Inf	100.0 % 0.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

Appendix A

J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	15.0 % 85.0 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	17.6 % 82.4 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

Appendix A

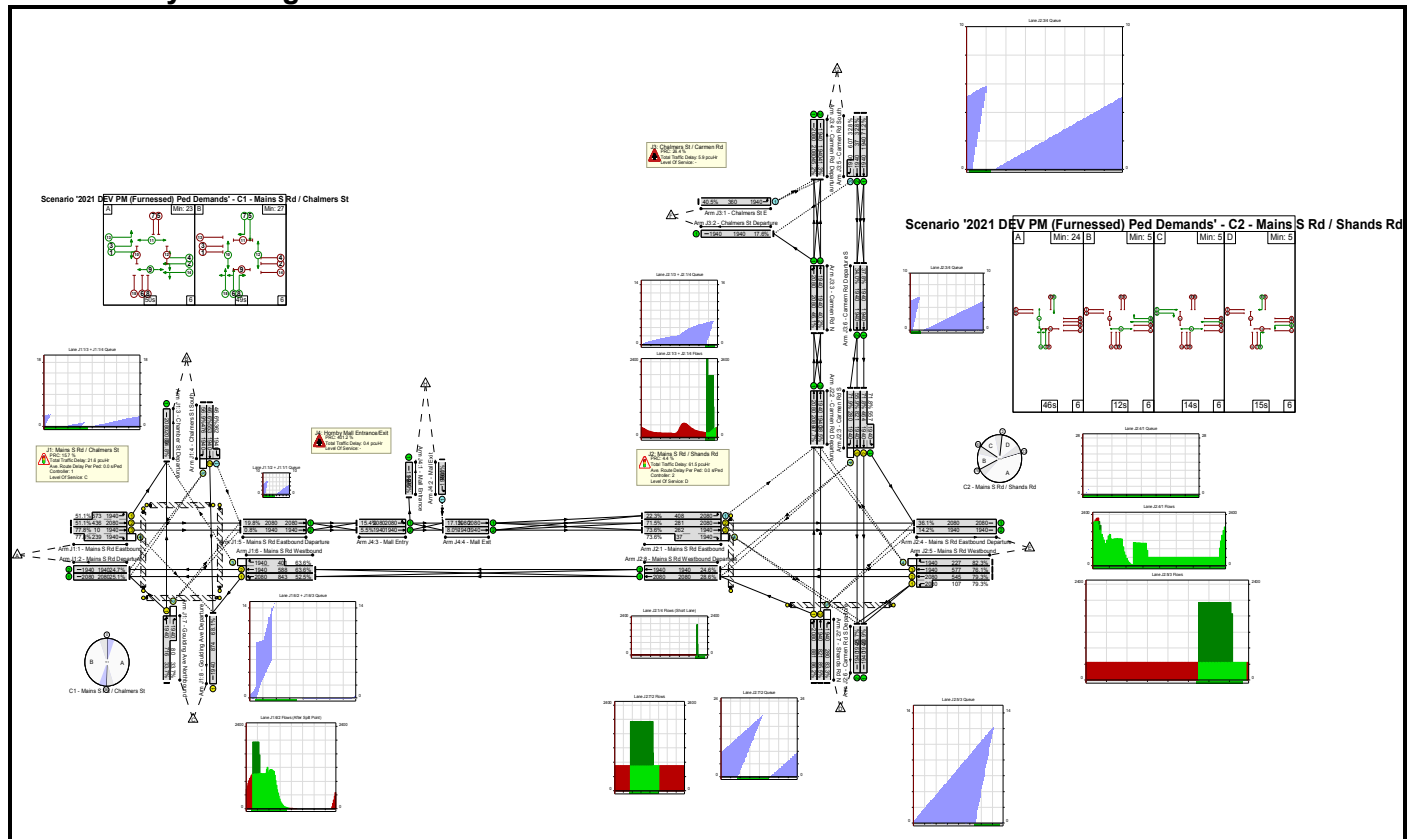
Travel Time Matrix, Delay Per PCU

Delay Per PCU :

	A	B	C	D	E	F	G	H
A	0.0	22.9	102.4	0.0	82.4	0.0	38.6	24.5
B	35.8	0.0	41.4	0.0	100.3	0.0	0.0	0.0
C	23.0	23.0	0.0	0.0	129.9	0.0	46.3	28.8
D	0.0	0.0	0.0	0.0	82.7	45.0	45.5	0.0
E	57.5	65.1	93.9	56.9	0.0	92.8	93.2	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	29.9	0.0
G	77.8	0.0	105.0	33.4	13.9	23.6	0.0	0.0
H	0.0	0.0	0.0	71.4	75.2	0.0	21.8	0.0

Scenario 5: '2021 DEV PM (Furnished) Ped Demands' (FG4: '2021 Base + Dev PM', Plan 1: 'Plan 1 - Ped Demands')

Network Layout Diagram



Appendix A  
**Network Results**

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	<b>86.2%</b>	<b>1313</b>	<b>801</b>	<b>11</b>	<b>89.3</b>	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	<b>77.8%</b>	<b>761</b>	<b>147</b>	<b>0</b>	<b>21.6</b>	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	50:44	44	516	2080:1940	436+573	51.1 : 51.1%	-	-	-	3.5	24.6	6.8
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	50	-	194	1940:1940	10+239	77.8 : 77.8%	116	70	0	3.4	63.1	5.1
2/1	Mains S Rd Departure	U	-		-	-	-	523	2080	2080	25.1%	-	-	-	0.2	1.2	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	479	1940	1940	24.7%	-	-	-	0.2	1.2	0.2
3/1	Chamber St Departure	U	-		-	-	-	724	2080	2080	34.8%	-	-	-	0.4	2.2	11.9
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	49	-	427	1940:1940	553+362	46.6 : 46.6%	161	8	0	2.2	18.8	8.0
4/3	Chalmers St South Right	O	C1:7		1	49	-	271	1940	476	56.9%	201	70	0	2.6	34.9	7.1
5/1	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	412	2080	2080	19.8%	-	-	-	0.1	1.1	0.1
5/2	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	15	1940	1940	0.8%	-	-	-	0.0	0.9	0.0
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	44	44	443	2080	843	52.5%	-	-	-	0.8	6.8	7.0
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	44	-	629	1940:1940	588+401	63.6 : 63.6%	255	0	0	1.5	8.8	15.6

Appendix A

7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	43:49	43	268	1940:1940	716+80	33.7 : 33.7%	27	0	0	2.0	26.4	5.3
8/1	Goulding Ave Departure	U	C1:5		1	49	-	595	1940	874	68.1%	-	-	-	4.6	27.5	18.0
Ped Link: P1	Mains S Rd	-	C1:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Chalmers St Crossing	-	C1:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Goulding Ave	-	C1:9		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>86.2%</b>	<b>74</b>	<b>654</b>	<b>11</b>	<b>61.5</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	91	2080	408	22.3%	47	44	0	0.3	12.1	1.5
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	14	-	201	2080	281	71.5%	-	-	-	3.8	68.1	6.9
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	14	-	220	1940:1940	262+37	73.6 : 73.6%	27	0	0	4.0	65.8	6.9
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	993	2080	2080	47.7%	-	-	-	0.5	1.9	8.6
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	746	1940	1940	38.5%	-	-	-	0.3	1.5	0.3
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	46	-	733	1940:1940	464+557	71.8 : 71.8%	-	-	-	3.7	18.0	12.6
3/3	Carmen Rd S Ahead	U	C2:6		1	46	-	459	1940	821	55.9%	-	-	-	3.7	29.1	11.2
3/4	Carmen Rd S Right	O	C2:8		1	15	-	201	1940	280	71.9%	0	197	4	3.8	67.5	7.1
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	751	2080	2080	36.1%	-	-	-	0.3	1.4	2.7

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4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	276	1940	1940	14.2%	-	-	-	0.1	1.1	0.1	
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	32:15	0	517	2080:2080	545+107	79.3 : 79.3%	-	-	-	7.1	49.3	15.7
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	32	-	439	1940	577	76.1%	-	-	-	5.9	48.2	13.8
5/4	Mains S Rd Westbound Right	O	C2:5		1	12	-	187	1940	227	82.3%	0	184	3	4.6	88.4	7.7
6/1	Carmen Rd S Departure	U	-		-	-	-	405	1940	1940	20.9%	-	-	-	0.1	1.2	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	499	1940	1940	25.7%	-	-	-	0.2	1.2	0.2
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	46	40	759	2080	881	86.2%	-	-	-	9.1	43.2	24.1
7/2	Shands Rd N Ahead	U	C2:7		1	46	-	702	1940	821	85.5%	-	-	-	8.4	43.3	22.3
7/3	Shands Rd N Right	O	C2:9		1	15	-	233	1940	280	83.3%	0	229	4	5.3	81.4	9.2
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	595	2080	2080	28.6%	-	-	-	0.2	1.2	0.2
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	477	1940	1940	24.6%	-	-	-	0.2	1.2	0.2
Ped Link: P1	Shands Rd	-	C2:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Mains S Rd	-	C2:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>71.2%</b>	<b>345</b>	<b>0</b>	<b>0</b>	<b>5.9</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	146	1940	360	40.5%	146	0	0	1.1	27.9	3.3
2/1	Chalmers St Departure	U	-		-	-	-	342	1940	1940	17.6%	-	-	-	0.1	1.1	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	959	2080	2080	46.1%	-	-	-	0.4	1.6	0.4



Appendix A

3/2	Carmen Rd N Ahead	U	-	-	-	-	780	1940	1940	40.2%	-	-	-	0.3	1.6	11.7
4/1	Carmen Rd Departure	U	-	-	-	-	941	2080	2080	45.2%	-	-	-	0.4	1.6	0.4
4/2	Carmen Rd Departure	U	-	-	-	-	801	1940	1940	41.3%	-	-	-	0.4	1.6	0.4
5/1	Carmen Rd South Ahead	U	-	-	-	-	1381	1940	1940	71.2%	-	-	-	1.2	3.2	1.2
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	211	1940:1940	37+607	32.8 : 32.8%	199	0	0	1.3	22.3	4.2
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	733	1940	1940	37.8%	-	-	-	0.3	1.5	0.3
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	660	1940	1940	34.0%	-	-	-	0.3	1.4	0.3
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>18.0%</b>	<b>133</b>	<b>0</b>	<b>0</b>	<b>0.4</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	48	1940	1940	2.5%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	133	1940	741	18.0%	133	0	0	0.1	3.0	0.1
3/1	Mall Entry Left Ahead	U	-	-	-	-	320	2080	2080	15.4%	-	-	-	0.1	1.0	0.1
3/2	Mall Entry Ahead	U	-	-	-	-	107	1940	1940	5.5%	-	-	-	0.0	1.0	0.0
4/1	Mall Exit Ahead	U	-	-	-	-	356	2080	2080	17.1%	-	-	-	0.1	1.0	0.1
4/2	Mall Exit Ahead	U	-	-	-	-	156	1940	1940	8.0%	-	-	-	0.0	1.0	0.0
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		15.7		Total Delay for Signalled Lanes (pcuHr):		20.68		Cycle Time (s):		111				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		4.4		Total Delay for Signalled Lanes (pcuHr):		59.34		Cycle Time (s):		111				
		PRC Over All Lanes (%):		4.4		Total Delay Over All Lanes(pcuHr):		89.34								

## Appendix A

**Network Summary**

<b>Controller</b>	<b>Stream</b>	<b>PRC (%)</b>	<b>Total Delay for stream (pcuHr)</b>
C1 - Mains S Rd / Chalmers St	1	15.68	20.68
C2 - Mains S Rd / Shands Rd	1	4.43	59.34
<b>Total Network Delay:</b> 89.34 pcuHr			
<b>Worst PRC:</b> 4.43 % (On Lane J2:7/1 in Stream 1)			
<b>Level Of Service:</b> D			

## Appendix A

## Lane Saturation Flows

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead Arm J1:8 Left	Inf Inf	65.9 % 34.1 %	2080	2080
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:2 Left Arm J1:3 Ahead	Inf Inf	27.0 % 73.0 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

Appendix A

Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead Arm J2:8 Left	Inf Inf	100.0 % 0.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

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J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	14.9 % 85.1 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	15.0 % 85.0 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

Appendix A

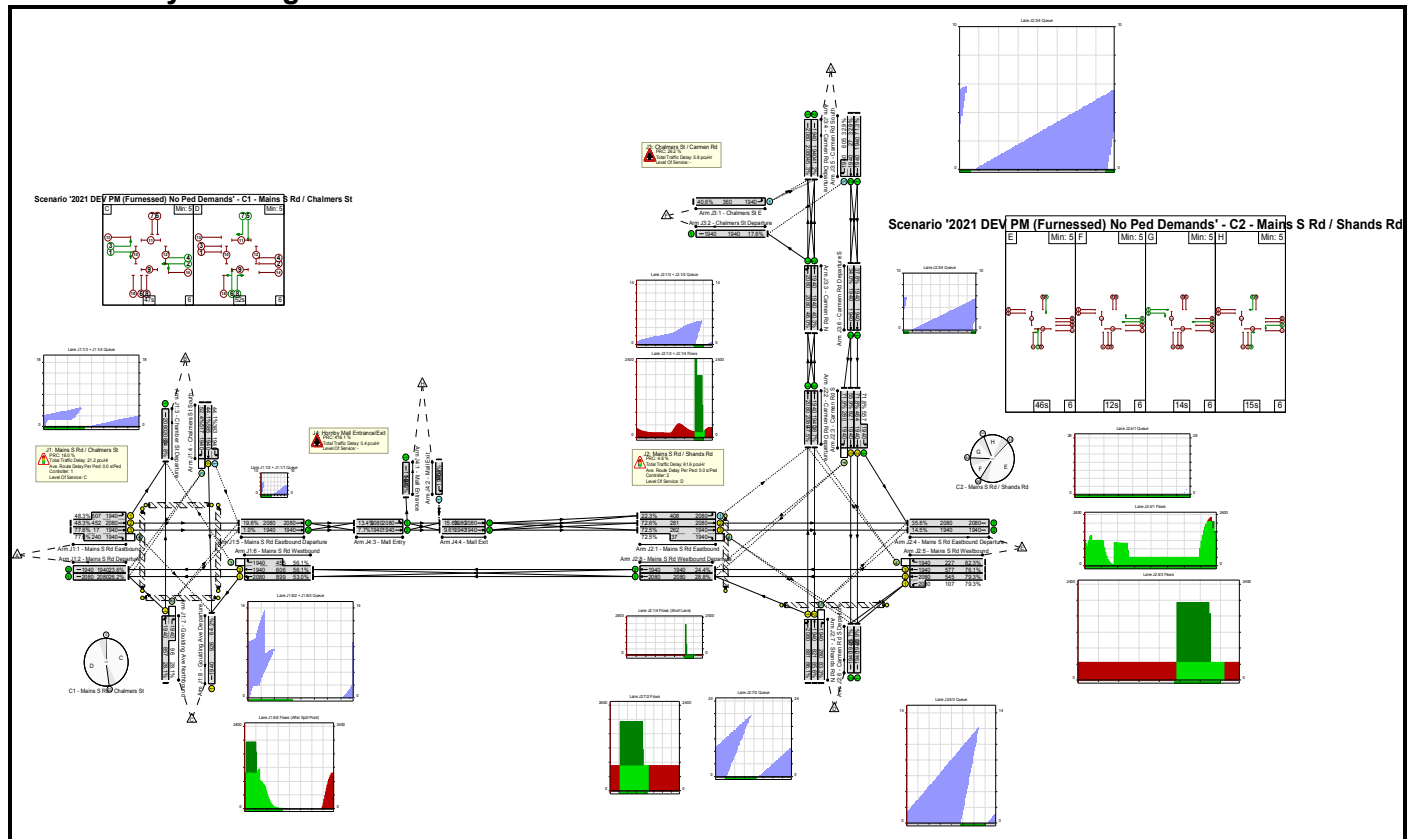
Travel Time Matrix, Delay Per PCU

Delay Per PCU :

	A	B	C	D	E	F	G	H
A	0.0	29.0	101.8	0.0	80.3	0.0	42.7	24.9
B	36.0	0.0	42.1	0.0	93.7	0.0	0.0	0.0
C	27.7	27.8	0.0	0.0	122.1	0.0	44.8	28.9
D	0.0	0.0	0.0	0.0	82.6	47.6	48.1	0.0
E	58.1	63.3	92.6	56.6	0.0	92.8	93.2	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	29.4	0.0
G	79.7	0.0	105.3	35.0	14.9	24.5	0.0	0.0
H	0.0	0.0	0.0	69.6	73.1	0.0	22.4	0.0

Scenario 6: '2021 DEV PM (Furnished) No Ped Demands' (FG4: '2021 Base + Dev PM', Plan 2: 'Plan 2 - No Ped Demands')

Network Layout Diagram



Appendix A  
**Network Results**

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	86.1%	1455	659	11	89.0	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	77.6%	900	8	0	21.2	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	47	0	511	2080:1940	452+607	48.3 : 48.3%	-	-	-	3.4	23.9	6.5
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	47	-	199	1940:1940	17+240	77.6 : 77.6%	186	0	0	4.1	74.2	7.1
2/1	Mains S Rd Departure	U	-		-	-	-	544	2080	2080	26.2%	-	-	-	0.2	1.2	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	458	1940	1940	23.6%	-	-	-	0.2	1.2	0.2
3/1	Chamber St Departure	U	-		-	-	-	724	2080	2080	34.8%	-	-	-	0.3	1.3	0.9
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	52	-	427	1940:1940	585+383	44.1 : 44.1%	161	8	0	2.0	16.8	7.5
4/3	Chalmers St South Right	O	C1:7		1	52	-	271	1940	517	52.4%	271	0	0	2.5	33.1	6.6
5/1	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	408	2080	2080	19.6%	-	-	-	0.1	1.1	0.1
5/2	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	19	1940	1940	1.0%	-	-	-	0.0	0.9	0.0
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	47	0	477	2080	899	53.0%	-	-	-	1.0	7.4	8.2
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	47	-	595	1940:1940	606+455	56.1 : 56.1%	255	0	0	2.1	12.8	14.3

Appendix A

7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	52	0	268	1940:1940	857+96	28.1 : 28.1%	27	0	0	1.5	20.2	4.6
8/1	Goulding Ave Departure	U	C1:5		1	52	-	595	1940	926	64.2%	-	-	-	3.9	23.4	17.7
Ped Link: P1	Mains S Rd	-	C1:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Chalmers St Crossing	-	C1:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P4	Goulding Ave	-	C1:9		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>86.1%</b>	<b>76</b>	<b>651</b>	<b>11</b>	<b>61.6</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	91	2080	408	22.3%	49	42	0	0.3	10.6	1.2
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	14	-	204	2080	281	72.6%	-	-	-	4.0	69.8	7.3
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	14	-	217	1940:1940	262+37	72.5 : 72.5%	27	0	0	4.0	66.7	6.9
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	988	2080	2080	47.5%	-	-	-	0.5	1.8	8.1
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	751	1940	1940	38.7%	-	-	-	0.3	1.5	0.3
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	46	-	733	1940:1940	464+557	71.8 : 71.8%	-	-	-	3.7	18.0	12.6
3/3	Carmen Rd S Ahead	U	C2:6		1	46	-	459	1940	821	55.9%	-	-	-	3.7	29.1	11.2
3/4	Carmen Rd S Right	O	C2:8		1	15	-	201	1940	280	71.9%	0	197	4	3.8	67.5	7.1
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	745	2080	2080	35.8%	-	-	-	0.3	1.4	3.2



Appendix A

4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	282	1940	1940	14.5%	-	-	-	0.1	1.1	0.1	
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	32:15	0	517	2080:2080	545+107	79.3 : 79.3%	-	-	-	7.1	49.3	15.7
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	32	-	439	1940	577	76.1%	-	-	-	5.9	48.2	13.8
5/4	Mains S Rd Westbound Right	O	C2:5		1	12	-	187	1940	227	82.3%	0	184	3	4.6	88.4	7.7
6/1	Carmen Rd S Departure	U	-		-	-	-	406	1940	1940	20.9%	-	-	-	0.1	1.2	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	498	1940	1940	25.7%	-	-	-	0.2	1.2	0.2
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	46	0	758	2080	881	86.1%	-	-	-	9.1	43.0	24.0
7/2	Shands Rd N Ahead	U	C2:7		1	46	-	703	1940	821	85.6%	-	-	-	8.5	43.4	22.4
7/3	Shands Rd N Right	O	C2:9		1	15	-	233	1940	280	83.3%	0	229	4	5.3	81.4	9.2
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	599	2080	2080	28.8%	-	-	-	0.2	1.2	1.4
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	473	1940	1940	24.4%	-	-	-	0.2	1.2	0.2
Ped Link: P1	Shands Rd	-	C2:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Mains S Rd	-	C2:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>71.3%</b>	<b>345</b>	<b>0</b>	<b>0</b>	<b>5.9</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	146	1940	360	40.6%	146	0	0	1.1	27.9	3.3
2/1	Chalmers St Departure	U	-		-	-	-	342	1940	1940	17.6%	-	-	-	0.1	1.1	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	957	2080	2080	46.0%	-	-	-	0.4	1.6	0.4

Appendix A

3/2	Carmen Rd N Ahead	U	-	-	-	-	782	1940	1940	40.3%	-	-	-	0.3	1.6	11.2
4/1	Carmen Rd Departure	U	-	-	-	-	943	2080	2080	45.3%	-	-	-	0.4	1.6	0.4
4/2	Carmen Rd Departure	U	-	-	-	-	799	1940	1940	41.2%	-	-	-	0.3	1.6	0.3
5/1	Carmen Rd South Ahead	U	-	-	-	-	1384	1940	1940	71.3%	-	-	-	1.2	3.2	1.2
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	208	1940:1940	27+605	32.9 : 32.9%	199	0	0	1.3	22.7	4.2
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	733	1940	1940	37.8%	-	-	-	0.3	1.5	0.3
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	660	1940	1940	34.0%	-	-	-	0.3	1.4	0.3
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>17.4%</b>	<b>133</b>	<b>0</b>	<b>0</b>	<b>0.4</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	48	1940	1940	2.5%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	133	1940	763	17.4%	133	0	0	0.1	2.9	0.1
3/1	Mall Entry Left Ahead	U	-	-	-	-	278	2080	2080	13.4%	-	-	-	0.1	1.0	0.1
3/2	Mall Entry Ahead	U	-	-	-	-	149	1940	1940	7.7%	-	-	-	0.0	1.0	0.0
4/1	Mall Exit Ahead	U	-	-	-	-	325	2080	2080	15.6%	-	-	-	0.1	1.0	0.1
4/2	Mall Exit Ahead	U	-	-	-	-	187	1940	1940	9.6%	-	-	-	0.1	1.0	0.1
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		16.0		Total Delay for Signalled Lanes (pcuHr):		20.44		Cycle Time (s):		111				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		4.6		Total Delay for Signalled Lanes (pcuHr):		59.49		Cycle Time (s):		111				
		PRC Over All Lanes (%):		4.6		Total Delay Over All Lanes(pcuHr):		89.05								

Appendix A

**Network Summary**

<b>Controller</b>	<b>Stream</b>	<b>PRC (%)</b>	<b>Total Delay for stream (pcuHr)</b>
C1 - Mains S Rd / Chalmers St	1	15.96	20.44
C2 - Mains S Rd / Shands Rd	1	4.57	59.49
<b>Total Network Delay:</b> 89.05 pcuHr			
<b>Worst PRC:</b> 4.57 % (On Lane J2:7/1 in Stream 1)			
<b>Level Of Service:</b> D			

Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead Arm J1:8 Left	Inf Inf	68.3 % 31.7 %	2080	2080
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right Arm J1:2 Left	Inf Inf	100.0 % 27.0 %	1940	1940
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:3 Ahead	Inf	73.0 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

Appendix A

Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead Arm J2:8 Left	Inf Inf	100.0 % 0.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

Appendix A

J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	14.9 % 85.1 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	17.3 % 82.7 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

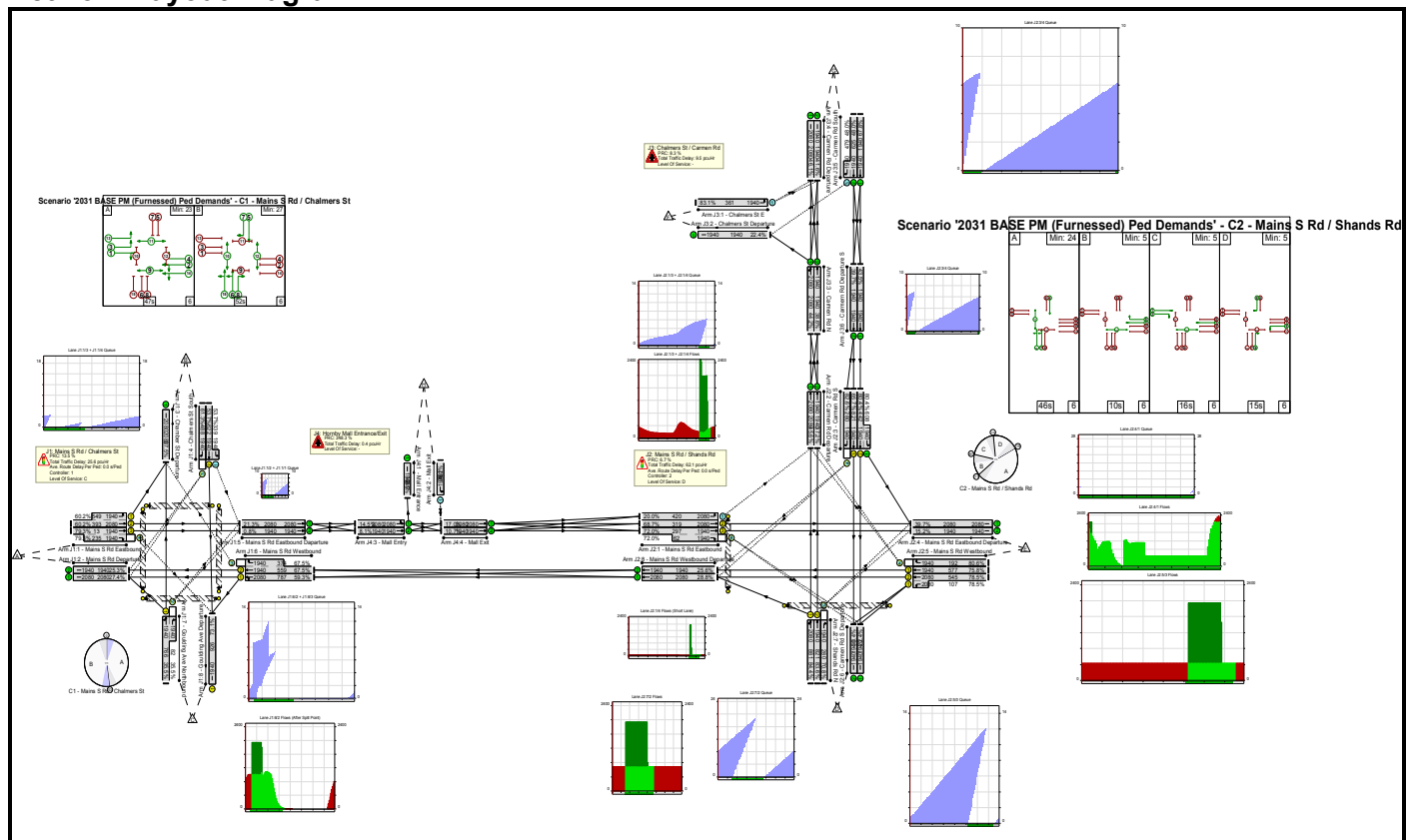
Appendix A

Travel Time Matrix, Delay Per PCU

Delay Per PCU :

	A	B	C	D	E	F	G	H
A	0.0	25.7	102.7	0.0	79.9	0.0	39.5	26.9
B	34.3	0.0	38.3	0.0	97.6	0.0	0.0	0.0
C	21.1	21.3	0.0	0.0	124.2	0.0	43.7	26.0
D	0.0	0.0	0.0	0.0	82.6	47.6	48.1	0.0
E	59.3	69.8	93.2	56.6	0.0	92.8	93.2	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	29.5	0.0
G	78.8	0.0	105.4	35.0	14.9	24.6	0.0	0.0
H	0.0	0.0	0.0	68.6	73.0	0.0	21.9	0.0

Scenario 7: '2031 BASE PM (Furnished) Ped Demands' (FG7: '2031 Base PM', Plan 1: 'Plan 1 - Ped Demands')  
Network Layout Diagram



Appendix A  
**Network Results**

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	84.4%	1575	759	11	97.6	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	79.3%	800	148	0	25.6	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	47:41	41	568	2080:1940	393+549	60.2 : 60.2%	-	-	-	4.5	28.3	8.4
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	47	-	196	1940:1940	13+235	79.3 : 79.3%	116	70	0	3.6	66.5	5.4
2/1	Mains S Rd Departure	U	-		-	-	-	570	2080	2080	27.4%	-	-	-	0.2	1.2	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	491	1940	1940	25.3%	-	-	-	0.2	1.2	0.2
3/1	Chamber St Departure	U	-		-	-	-	780	2080	2080	37.5%	-	-	-	0.6	2.6	14.3
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	52	-	516	1940:1940	622+339	53.7 : 53.7%	174	8	0	2.9	20.0	10.4
4/3	Chalmers St South Right	O	C1:7		1	52	-	299	1940	488	61.3%	229	70	0	2.9	34.9	7.9
5/1	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	442	2080	2080	21.3%	-	-	-	0.1	1.1	0.1
5/2	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	16	1940	1940	0.8%	-	-	-	0.0	0.9	0.0
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	41	41	467	2080	787	59.3%	-	-	-	1.3	10.2	10.2
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	41	-	629	1940:1940	559+374	67.5 : 67.5%	252	0	0	2.2	12.6	13.0



Appendix A

7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	46:52	46	301	1940:1940	766+82	35.5 : 35.5%	29	0	0	2.1	25.0	5.9
8/1	Goulding Ave Departure	U	C1:5		1	52	-	677	1940	926	73.1%	-	-	-	5.1	27.1	20.5
Ped Link: P1	Mains S Rd	-	C1:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Chalmers St Crossing	-	C1:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Goulding Ave	-	C1:9		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>84.4%</b>	<b>92</b>	<b>611</b>	<b>11</b>	<b>62.1</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	84	2080	420	20.0%	47	37	0	0.2	10.3	1.2
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	16	-	219	2080	319	68.7%	-	-	-	3.9	64.0	7.2
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	16	-	259	1940:1940	297+62	72.0 : 72.0%	45	0	0	4.3	60.3	7.4
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	948	2080	2080	45.6%	-	-	-	0.5	1.8	8.0
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	721	1940	1940	37.2%	-	-	-	0.3	1.5	0.3
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	46	-	844	1940:1940	442+608	80.4 : 80.4%	-	-	-	4.9	20.8	16.4
3/3	Carmen Rd S Ahead	U	C2:6		1	46	-	540	1940	821	65.7%	-	-	-	4.8	31.8	14.2
3/4	Carmen Rd S Right	O	C2:8		1	15	-	231	1940	280	82.6%	0	227	4	5.1	80.1	9.0
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	826	2080	2080	39.7%	-	-	-	0.3	1.5	5.0

## Appendix A

4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	294	1940	1940	15.2%	-	-	-	0.1	1.1	0.1	
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	32:15	0	512	2080:2080	545+107	78.5 : 78.5%	-	-	-	6.9	48.8	15.5
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	32	-	437	1940	577	75.8%	-	-	-	5.8	48.0	13.7
5/4	Mains S Rd Westbound Right	O	C2:5		1	10	-	155	1940	192	80.6%	0	152	3	4.0	92.8	6.5
6/1	Carmen Rd S Departure	U	-		-	-	-	434	1940	1940	22.4%	-	-	-	0.1	1.2	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	590	1940	1940	30.4%	-	-	-	0.2	1.3	0.2
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	46	40	743	2080	881	84.4%	-	-	-	8.5	41.3	23.0
7/2	Shands Rd N Ahead	U	C2:7		1	46	-	687	1940	821	83.6%	-	-	-	7.9	41.5	21.4
7/3	Shands Rd N Right	O	C2:9		1	15	-	198	1940	280	70.8%	0	194	4	3.7	66.7	7.0
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	599	2080	2080	28.8%	-	-	-	0.2	1.2	0.2
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	497	1940	1940	25.6%	-	-	-	0.2	1.2	0.2
Ped Link: P1	Shands Rd	-	C2:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Mains S Rd	-	C2:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>83.1%</b>	<b>530</b>	<b>0</b>	<b>0</b>	<b>9.5</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	300	1940	361	83.1%	300	0	0	4.4	52.3	10.2
2/1	Chalmers St Departure	U	-		-	-	-	434	1940	1940	22.4%	-	-	-	0.1	1.2	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	920	2080	2080	44.2%	-	-	-	0.4	1.6	0.4

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3/2	Carmen Rd N Ahead	U	-	-	-	-	749	1940	1940	38.6%	-	-	-	0.3	1.6	12.7
4/1	Carmen Rd Departure	U	-	-	-	-	958	2080	2080	46.1%	-	-	-	0.4	1.6	0.4
4/2	Carmen Rd Departure	U	-	-	-	-	807	1940	1940	41.6%	-	-	-	0.4	1.6	6.8
5/1	Carmen Rd South Ahead	U	-	-	-	-	1315	1940	1940	67.8%	-	-	-	1.0	2.9	1.0
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	530	1940:1940	625+479	48.0 : 48.0%	230	0	0	1.7	11.4	5.6
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	844	1940	1940	43.5%	-	-	-	0.4	1.6	0.4
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	771	1940	1940	39.7%	-	-	-	0.3	1.5	0.3
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>20.1%</b>	<b>153</b>	<b>0</b>	<b>0</b>	<b>0.4</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	49	1940	1940	2.5%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	153	1940	762	20.1%	153	0	0	0.1	3.0	0.1
3/1	Mall Entry Left Ahead	U	-	-	-	-	301	2080	2080	14.5%	-	-	-	0.1	1.0	0.1
3/2	Mall Entry Ahead	U	-	-	-	-	157	1940	1940	8.1%	-	-	-	0.0	1.0	0.0
4/1	Mall Exit Ahead	U	-	-	-	-	354	2080	2080	17.0%	-	-	-	0.1	1.0	0.1
4/2	Mall Exit Ahead	U	-	-	-	-	208	1940	1940	10.7%	-	-	-	0.1	1.0	0.1
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		13.5		Total Delay for Signalled Lanes (pcuHr):		24.57		Cycle Time (s):		111				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		6.7		Total Delay for Signalled Lanes (pcuHr):		59.89		Cycle Time (s):		111				
		PRC Over All Lanes (%):		6.7		Total Delay Over All Lanes(pcuHr):		97.58								

## Appendix A

**Network Summary**

<b>Controller</b>	<b>Stream</b>	<b>PRC (%)</b>	<b>Total Delay for stream (pcuHr)</b>
C1 - Mains S Rd / Chalmers St	1	13.53	24.57
C2 - Mains S Rd / Shands Rd	1	6.68	59.89
<b>Total Network Delay:</b> 97.58 pcuHr			
<b>Worst PRC:</b> 6.68 % (On Lane J2:7/1 in Stream 1)			
<b>Level Of Service:</b> D			

Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead Arm J1:8 Left	Inf Inf	66.4 % 33.6 %	2080	2080
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:2 Left Arm J1:3 Ahead	Inf Inf	27.6 % 72.4 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

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Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead Arm J2:8 Left	Inf Inf	100.0 % 0.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

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J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	22.2 % 77.8 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	16.3 % 83.7 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

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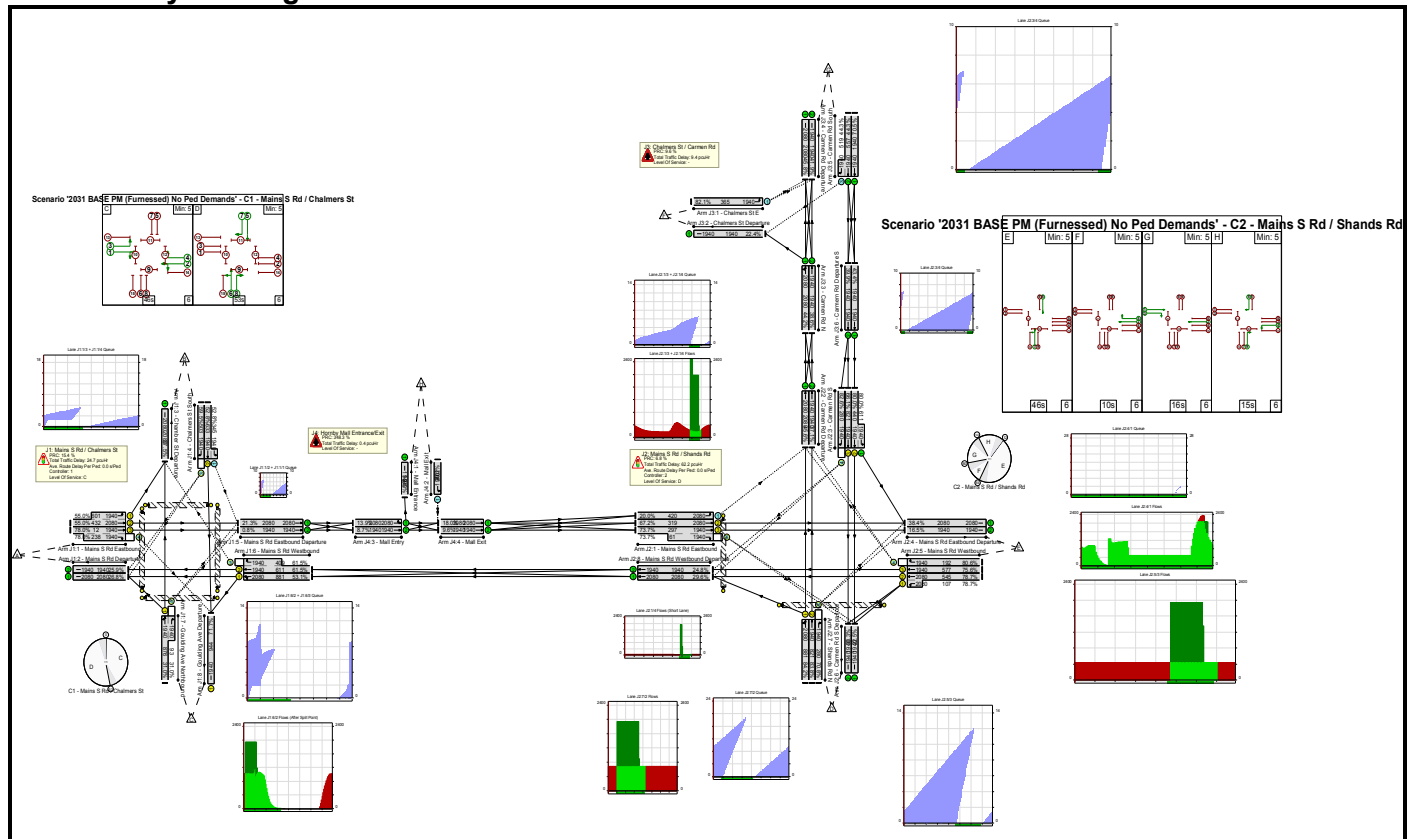
Travel Time Matrix, Delay Per PCU

Delay Per PCU :

	A	B	C	D	E	F	G	H
A	0.0	33.3	105.4	0.0	76.3	0.0	41.9	28.0
B	36.1	0.0	42.5	94.7	94.8	0.0	0.0	0.0
C	25.9	26.1	0.0	0.0	120.8	0.0	46.7	30.2
D	0.0	0.0	0.0	0.0	68.0	45.8	46.2	0.0
E	61.6	69.3	95.8	56.2	0.0	97.2	97.5	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	53.9	0.0
G	93.2	0.0	120.3	37.9	18.4	23.0	0.0	0.0
H	0.0	0.0	0.0	63.9	67.5	0.0	21.1	0.0

Scenario 8: '2031 BASE PM (Furnished) No Ped Demands' (FG7: '2031 Base PM', Plan 2: 'Plan 2 - No Ped Demands')

Network Layout Diagram





Appendix A  
**Network Results**

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	<b>84.2%</b>	<b>1711</b>	<b>622</b>	<b>11</b>	<b>96.7</b>	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	<b>78.0%</b>	<b>940</b>	<b>8</b>	<b>0</b>	<b>24.7</b>	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	46	0	569	2080:1940	432+601	55.0 : 55.0%	-	-	-	4.0	25.5	7.7
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	46	-	195	1940:1940	12+238	78.0 : 78.0%	186	0	0	4.1	76.2	7.1
2/1	Mains S Rd Departure	U	-		-	-	-	558	2080	2080	26.8%	-	-	-	0.2	1.2	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	503	1940	1940	25.9%	-	-	-	0.2	1.3	0.2
3/1	Chamber St Departure	U	-		-	-	-	780	2080	2080	37.5%	-	-	-	0.3	1.4	2.7
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	53	-	516	1940:1940	633+345	52.8 : 52.8%	174	8	0	2.8	19.2	10.1
4/3	Chalmers St South Right	O	C1:7		1	53	-	299	1940	503	59.5%	299	0	0	3.0	35.7	7.7
5/1	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	443	2080	2080	21.3%	-	-	-	0.1	1.1	0.1
5/2	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	15	1940	1940	0.8%	-	-	-	0.0	0.9	0.0
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	46	0	468	2080	881	53.1%	-	-	-	1.2	9.2	10.6
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	46	-	628	1940:1940	611+409	61.5 : 61.5%	252	0	0	2.5	14.6	12.3

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7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	53	0	301	1940:1940	876+93	31.0 : 31.0%	29	0	0	1.7	20.3	5.2
8/1	Goulding Ave Departure	U	C1:5		1	53	-	677	1940	944	71.7%	-	-	-	4.6	24.5	20.4
Ped Link: P1	Mains S Rd	-	C1:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Chalmers St Crossing	-	C1:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P4	Goulding Ave	-	C1:9		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>84.2%</b>	<b>88</b>	<b>614</b>	<b>11</b>	<b>62.2</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	84	2080	420	20.0%	43	41	0	0.2	9.7	0.9
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	16	-	214	2080	319	67.2%	-	-	-	3.7	62.9	7.2
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	16	-	264	1940:1940	297+61	73.7 : 73.7%	45	0	0	4.7	64.0	7.9
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	949	2080	2080	45.6%	-	-	-	0.5	1.8	7.5
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	720	1940	1940	37.1%	-	-	-	0.3	1.5	0.3
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	46	-	841	1940:1940	440+611	80.0 : 80.0%	-	-	-	4.8	20.3	15.9
3/3	Carmen Rd S Ahead	U	C2:6		1	46	-	543	1940	821	66.1%	-	-	-	4.8	32.0	14.2
3/4	Carmen Rd S Right	O	C2:8		1	15	-	231	1940	280	82.6%	0	227	4	5.1	80.1	9.0
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	799	2080	2080	38.4%	-	-	-	0.3	1.4	4.5

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4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	321	1940	1940	16.5%	-	-	-	0.1	1.1	0.1	
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	32:15	0	513	2080:2080	545+107	78.7 : 78.7%	-	-	-	7.0	48.9	15.5
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	32	-	436	1940	577	75.6%	-	-	-	5.8	47.9	13.6
5/4	Mains S Rd Westbound Right	O	C2:5		1	10	-	155	1940	192	80.6%	0	152	3	4.0	92.8	6.5
6/1	Carmen Rd S Departure	U	-		-	-	-	437	1940	1940	22.5%	-	-	-	0.1	1.2	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	587	1940	1940	30.3%	-	-	-	0.2	1.3	0.2
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	46	0	742	2080	881	84.2%	-	-	-	8.5	41.2	23.0
7/2	Shands Rd N Ahead	U	C2:7		1	46	-	688	1940	821	83.8%	-	-	-	7.9	41.6	21.4
7/3	Shands Rd N Right	O	C2:9		1	15	-	198	1940	280	70.8%	0	194	4	3.7	66.7	7.0
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	615	2080	2080	29.6%	-	-	-	0.2	1.2	0.2
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	481	1940	1940	24.8%	-	-	-	0.2	1.2	0.2
Ped Link: P1	Shands Rd	-	C2:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Mains S Rd	-	C2:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>82.1%</b>	<b>530</b>	<b>0</b>	<b>0</b>	<b>9.4</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	300	1940	365	82.1%	300	0	0	4.2	50.4	10.0
2/1	Chalmers St Departure	U	-		-	-	-	434	1940	1940	22.4%	-	-	-	0.1	1.2	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	920	2080	2080	44.2%	-	-	-	0.4	1.6	0.4

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3/2	Carmen Rd N Ahead	U	-	-	-	-	749	1940	1940	38.6%	-	-	-	0.3	1.5	10.6
4/1	Carmen Rd Departure	U	-	-	-	-	953	2080	2080	45.8%	-	-	-	0.4	1.6	0.4
4/2	Carmen Rd Departure	U	-	-	-	-	812	1940	1940	41.9%	-	-	-	0.4	1.6	5.2
5/1	Carmen Rd South Ahead	U	-	-	-	-	1368	1940	1940	70.5%	-	-	-	1.2	3.1	1.2
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	477	1940:1940	557+519	44.3 : 44.3%	230	0	0	1.6	12.2	5.2
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	841	1940	1940	43.4%	-	-	-	0.4	1.6	0.4
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	774	1940	1940	39.9%	-	-	-	0.3	1.5	0.3
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>20.1%</b>	<b>153</b>	<b>0</b>	<b>0</b>	<b>0.4</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	49	1940	1940	2.5%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	153	1940	762	20.1%	153	0	0	0.1	3.0	0.1
3/1	Mall Entry Left Ahead	U	-	-	-	-	289	2080	2080	13.9%	-	-	-	0.1	1.0	0.1
3/2	Mall Entry Ahead	U	-	-	-	-	169	1940	1940	8.7%	-	-	-	0.0	1.0	0.0
4/1	Mall Exit Ahead	U	-	-	-	-	375	2080	2080	18.0%	-	-	-	0.1	1.1	0.1
4/2	Mall Exit Ahead	U	-	-	-	-	187	1940	1940	9.6%	-	-	-	0.1	1.0	0.1
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		15.4		Total Delay for Signalled Lanes (pcuHr):		23.92		Cycle Time (s):		111				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		6.8		Total Delay for Signalled Lanes (pcuHr):		60.03		Cycle Time (s):		111				
		PRC Over All Lanes (%):		6.8		Total Delay Over All Lanes(pcuHr):		96.70								

## Appendix A

**Network Summary**

<b>Controller</b>	<b>Stream</b>	<b>PRC (%)</b>	<b>Total Delay for stream (pcuHr)</b>
C1 - Mains S Rd / Chalmers St	1	15.39	23.92
C2 - Mains S Rd / Shands Rd	1	6.83	60.03
<b>Total Network Delay:</b> 96.70 pcuHr			
<b>Worst PRC:</b> 6.83 % (On Lane J2:7/1 in Stream 1)			
<b>Level Of Service:</b> D			

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**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead Arm J1:8 Left	Inf Inf	66.5 % 33.5 %	2080	2080
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:2 Left Arm J1:3 Ahead	Inf Inf	27.6 % 72.4 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

Appendix A

Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead Arm J2:8 Left	Inf Inf	100.0 % 0.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

Appendix A

J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	22.2 % 77.8 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	17.0 % 83.0 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940



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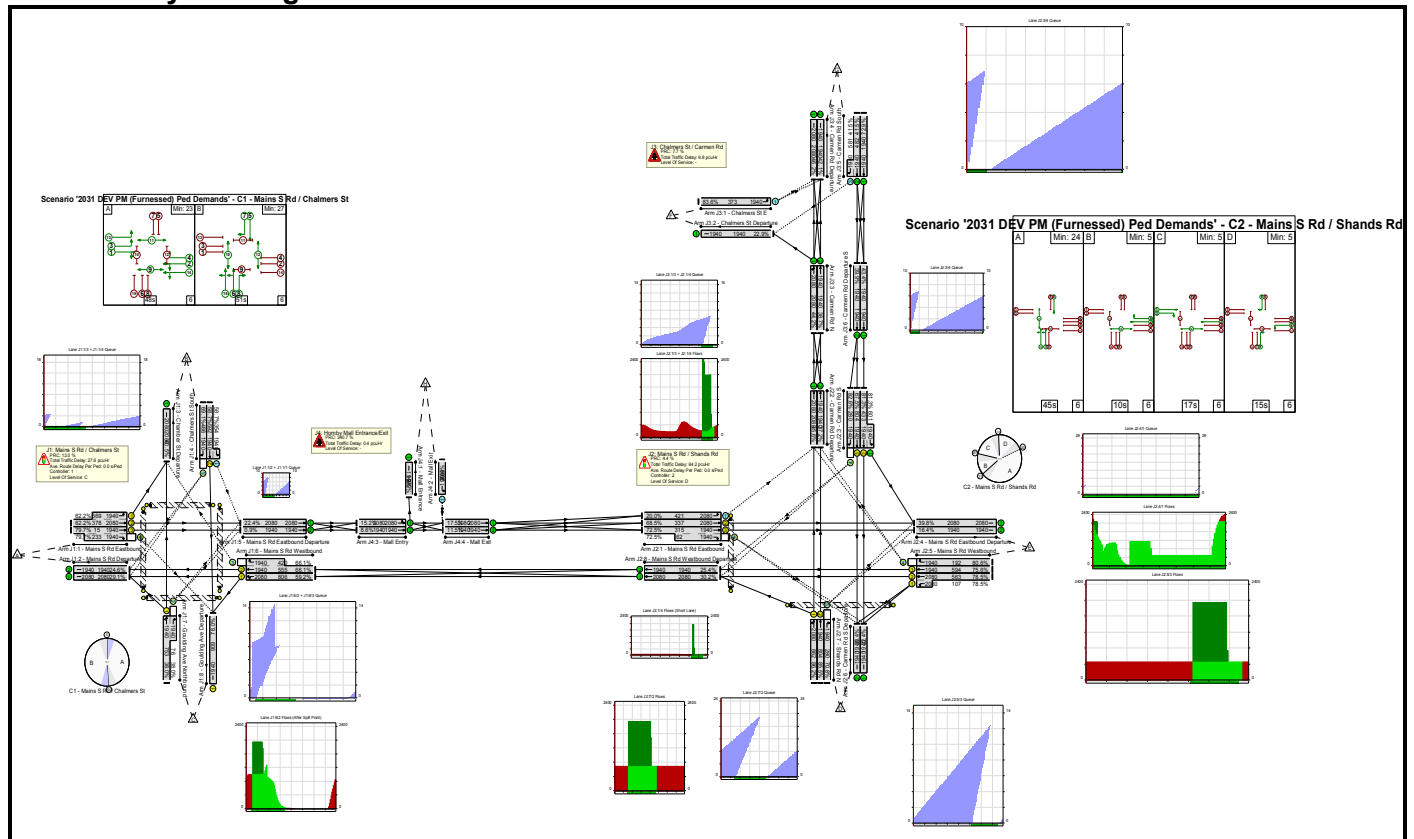
Travel Time Matrix, Delay Per PCU

Delay Per PCU :

	A	B	C	D	E	F	G	H
A	0.0	27.5	106.0	0.0	74.8	0.0	39.5	27.8
B	36.9	0.0	41.1	97.7	98.8	0.0	0.0	0.0
C	20.9	21.1	0.0	0.0	117.9	0.0	47.5	28.7
D	0.0	0.0	0.0	0.0	68.0	45.8	46.2	0.0
E	61.1	73.1	95.9	56.2	0.0	97.2	97.5	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	52.0	0.0
G	92.0	0.0	120.3	38.0	18.3	22.9	0.0	0.0
H	0.0	0.0	0.0	65.1	68.0	0.0	20.9	0.0

Scenario 9: '2031 DEV PM (Furnished) Ped Demands' (FG8: '2031 Base + Dev PM', Plan 1: 'Plan 1 - Ped Demands')

Network Layout Diagram



Appendix A  
**Network Results**

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	<b>86.2%</b>	<b>1670</b>	<b>761</b>	<b>11</b>	<b>102.1</b>	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	<b>79.7%</b>	<b>874</b>	<b>149</b>	<b>0</b>	<b>27.6</b>	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	48:42	42	589	2080:1940	378+569	62.2 : 62.2%	-	-	-	4.6	28.1	9.1
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	48	-	198	1940:1940	15+233	79.7 : 79.7%	116	70	0	3.6	66.4	5.3
2/1	Mains S Rd Departure	U	-		-	-	-	606	2080	2080	29.1%	-	-	-	0.2	1.2	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	478	1940	1940	24.6%	-	-	-	0.2	1.2	0.2
3/1	Chamber St Departure	U	-		-	-	-	843	2080	2080	40.5%	-	-	-	0.7	2.9	16.0
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	51	-	556	1940:1940	592+354	58.7 : 58.7%	199	9	0	3.3	21.6	11.8
4/3	Chalmers St South Right	O	C1:7		1	51	-	322	1940	466	69.1%	252	70	0	3.6	40.2	9.2
5/1	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	466	2080	2080	22.4%	-	-	-	0.1	1.1	0.1
5/2	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	18	1940	1940	0.9%	-	-	-	0.0	0.9	0.0
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	42	42	477	2080	806	59.2%	-	-	-	1.2	9.3	8.8
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	42	-	645	1940:1940	555+420	66.1 : 66.1%	278	0	0	2.3	12.9	15.6

Appendix A

7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	45:51	45	315	1940:1940	753+76	38.0 : 38.0%	29	0	0	2.3	25.9	6.4
8/1	Goulding Ave Departure	U	C1:5		1	51	-	691	1940	909	76.0%	-	-	-	5.4	28.2	21.3
Ped Link: P1	Mains S Rd	-	C1:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Chalmers St Crossing	-	C1:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Goulding Ave	-	C1:9		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>86.2%</b>	<b>90</b>	<b>612</b>	<b>11</b>	<b>64.2</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	84	2080	421	20.0%	45	39	0	0.2	10.7	1.3
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	17	-	231	2080	337	68.5%	-	-	-	4.1	63.9	7.6
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	17	-	273	1940:1940	315+62	72.5 : 72.5%	45	0	0	4.6	61.3	7.9
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	948	2080	2080	45.6%	-	-	-	0.5	1.8	7.6
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	721	1940	1940	37.2%	-	-	-	0.3	1.5	0.3
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	45	-	841	1940:1940	433+601	81.3 : 81.3%	-	-	-	5.1	21.7	16.7
3/3	Carmen Rd S Ahead	U	C2:6		1	45	-	543	1940	804	67.5%	-	-	-	5.0	33.2	14.6
3/4	Carmen Rd S Right	O	C2:8		1	15	-	231	1940	280	82.6%	0	227	4	5.1	80.1	9.0
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	827	2080	2080	39.8%	-	-	-	0.3	1.5	5.1

Appendix A

4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	319	1940	1940	16.4%	-	-	-	0.1	1.1	0.1	
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	33:15	0	526	2080:2080	563+107	78.5 : 78.5%	-	-	-	7.0	47.9	15.7
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	33	-	449	1940	594	75.6%	-	-	-	5.8	46.9	14.0
5/4	Mains S Rd Westbound Right	O	C2:5		1	10	-	155	1940	192	80.6%	0	152	3	4.0	92.8	6.5
6/1	Carmen Rd S Departure	U	-		-	-	-	435	1940	1940	22.4%	-	-	-	0.1	1.2	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	589	1940	1940	30.4%	-	-	-	0.2	1.3	0.2
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	45	39	743	2080	862	86.2%	-	-	-	9.1	44.0	23.8
7/2	Shands Rd N Ahead	U	C2:7		1	45	-	687	1940	804	85.5%	-	-	-	8.4	44.2	21.9
7/3	Shands Rd N Right	O	C2:9		1	15	-	198	1940	280	70.8%	0	194	4	3.7	66.7	7.0
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	629	2080	2080	30.2%	-	-	-	0.2	1.2	0.2
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	493	1940	1940	25.4%	-	-	-	0.2	1.2	0.2
Ped Link: P1	Shands Rd	-	C2:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Mains S Rd	-	C2:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>83.6%</b>	<b>553</b>	<b>0</b>	<b>0</b>	<b>9.8</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	312	1940	373	83.6%	312	0	0	4.5	51.6	10.6
2/1	Chalmers St Departure	U	-		-	-	-	445	1940	1940	22.9%	-	-	-	0.1	1.2	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	919	2080	2080	44.2%	-	-	-	0.4	1.5	0.4

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3/2	Carmen Rd N Ahead	U	-	-	-	-	750	1940	1940	38.7%	-	-	-	0.3	1.5	10.1
4/1	Carmen Rd Departure	U	-	-	-	-	960	2080	2080	46.2%	-	-	-	0.4	1.6	0.4
4/2	Carmen Rd Departure	U	-	-	-	-	817	1940	1940	42.1%	-	-	-	0.4	1.6	5.8
5/1	Carmen Rd South Ahead	U	-	-	-	-	1415	1940	1940	72.9%	-	-	-	1.3	3.4	1.3
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	441	1940:1940	482+581	41.5 : 41.5%	241	0	0	1.6	13.1	5.3
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	841	1940	1940	43.4%	-	-	-	0.4	1.6	0.4
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	774	1940	1940	39.9%	-	-	-	0.3	1.5	0.3
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>20.4%</b>	<b>153</b>	<b>0</b>	<b>0</b>	<b>0.4</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	49	1940	1940	2.5%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	153	1940	749	20.4%	153	0	0	0.1	3.0	0.1
3/1	Mall Entry Left Ahead	U	-	-	-	-	317	2080	2080	15.2%	-	-	-	0.1	1.0	0.1
3/2	Mall Entry Ahead	U	-	-	-	-	167	1940	1940	8.6%	-	-	-	0.0	1.0	0.0
4/1	Mall Exit Ahead	U	-	-	-	-	365	2080	2080	17.5%	-	-	-	0.1	1.0	0.1
4/2	Mall Exit Ahead	U	-	-	-	-	223	1940	1940	11.5%	-	-	-	0.1	1.0	0.1
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		13.0		Total Delay for Signalled Lanes (pcuHr):		26.42		Cycle Time (s):		111				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		4.4		Total Delay for Signalled Lanes (pcuHr):		62.00		Cycle Time (s):		111				
		PRC Over All Lanes (%):		4.4		Total Delay Over All Lanes(pcuHr):		102.06								

## Appendix A

**Network Summary**

<b>Controller</b>	<b>Stream</b>	<b>PRC (%)</b>	<b>Total Delay for stream (pcuHr)</b>
C1 - Mains S Rd / Chalmers St	1	12.97	26.42
C2 - Mains S Rd / Shands Rd	1	4.41	62.00
<b>Total Network Delay:</b> 102.06 pcuHr			
<b>Worst PRC:</b> 4.41 % (On Lane J2:7/1 in Stream 1)			
<b>Level Of Service:</b> D			

Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead Arm J1:8 Left	Inf Inf	67.1 % 32.9 %	2080	2080
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:2 Left Arm J1:3 Ahead	Inf Inf	26.2 % 73.8 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

Appendix A

Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead Arm J2:8 Left	Inf Inf	100.0 % 0.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080



Appendix A

J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	22.2 % 77.8 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	15.5 % 84.5 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

Appendix A

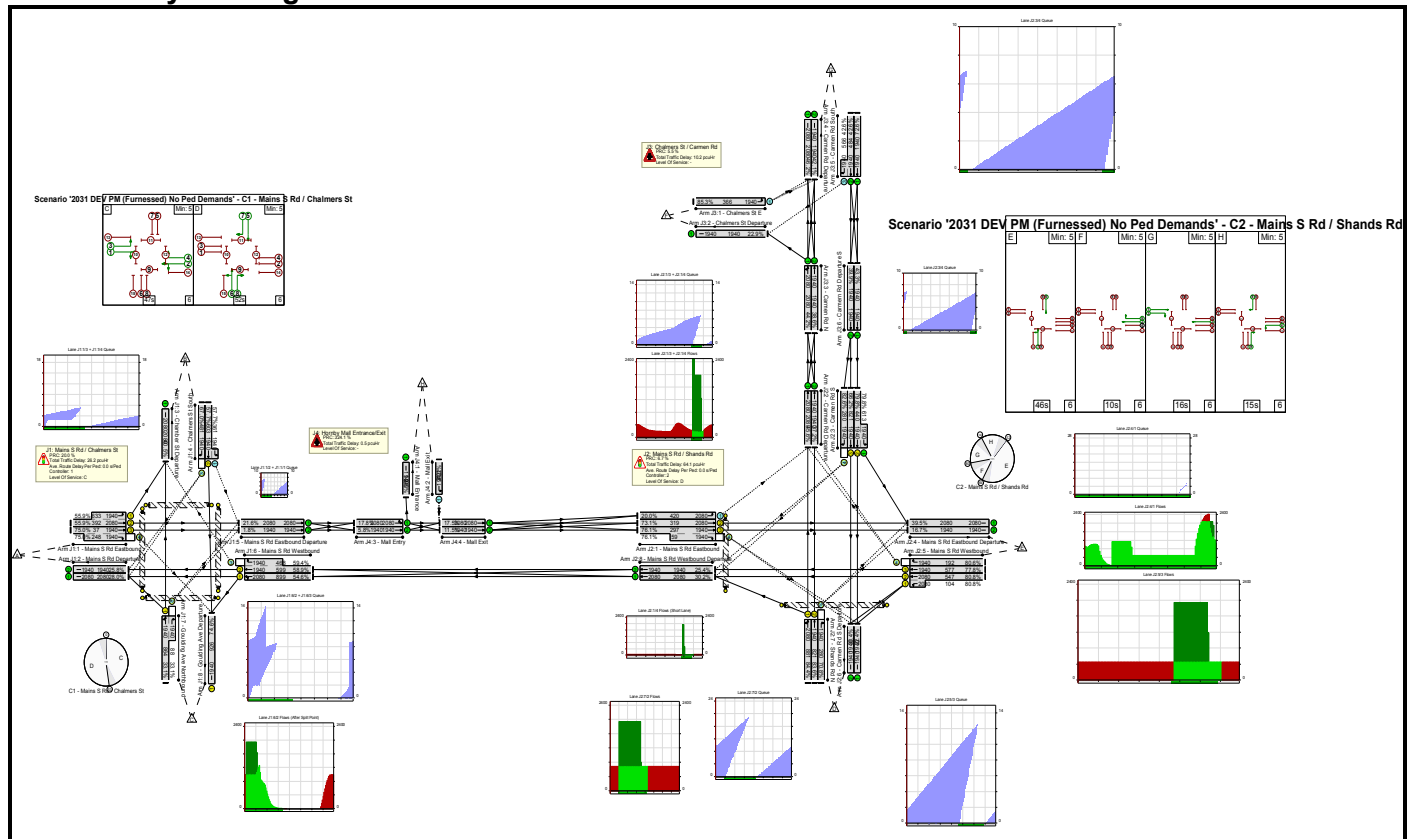
Travel Time Matrix, Delay Per PCU

Delay Per PCU :

	A	B	C	D	E	F	G	H
A	0.0	33.5	106.9	0.0	75.5	0.0	43.1	28.3
B	41.4	0.0	45.2	96.8	97.2	0.0	0.0	0.0
C	27.0	27.3	0.0	0.0	118.3	0.0	46.1	29.7
D	0.0	0.0	0.0	0.0	68.0	48.5	48.9	0.0
E	60.1	68.9	96.2	55.8	0.0	97.2	97.5	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	53.2	0.0
G	93.5	0.0	121.8	39.6	19.7	22.3	0.0	0.0
H	0.0	0.0	0.0	62.6	66.4	0.0	21.4	0.0

Scenario 10: '2031 DEV PM (Furnished) No Ped Demands' (FG8: '2031 Base + Dev PM', Plan 2: 'Plan 2 - No Ped Demands')

Network Layout Diagram



Appendix A  
Network Results

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	85.3%	1808	624	11	100.9	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	75.0%	1014	9	0	26.2	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	47	0	573	2080:1940	392+633	55.9 : 55.9%	-	-	-	4.0	25.1	8.2
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	47	-	214	1940:1940	37+248	75.0 : 75.0%	186	0	0	4.0	66.5	6.9
2/1	Mains S Rd Departure	U	-		-	-	-	583	2080	2080	28.0%	-	-	-	0.2	1.2	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	501	1940	1940	25.8%	-	-	-	0.2	1.3	0.2
3/1	Chamber St Departure	U	-		-	-	-	843	2080	2080	40.5%	-	-	-	0.4	1.6	5.7
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	52	-	556	1940:1940	603+361	57.7 : 57.7%	199	9	0	3.2	20.7	11.6
4/3	Chalmers St South Right	O	C1:7		1	52	-	322	1940	481	67.0%	322	0	0	3.6	40.4	9.0
5/1	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	450	2080	2080	21.6%	-	-	-	0.1	1.1	0.1
5/2	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	34	1940	1940	1.8%	-	-	-	0.0	0.9	0.0
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	47	0	491	2080	899	54.6%	-	-	-	1.2	8.5	10.5
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	47	-	631	1940:1940	599+468	58.9 : 59.4%	278	0	0	2.6	15.0	14.9

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7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	52	0	315	1940:1940	864+88	33.1 : 33.1%	29	0	0	1.8	21.0	5.6
8/1	Goulding Ave Departure	U	C1:5		1	52	-	691	1940	926	74.6%	-	-	-	4.9	25.8	21.1
Ped Link: P1	Mains S Rd	-	C1:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Chalmers St Crossing	-	C1:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P4	Goulding Ave	-	C1:9		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>84.4%</b>	<b>88</b>	<b>614</b>	<b>11</b>	<b>64.1</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	84	2080	420	20.0%	43	41	0	0.2	9.7	0.9
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	16	-	233	2080	319	73.1%	-	-	-	4.4	68.5	8.2
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	16	-	271	1940:1940	297+59	76.1 : 76.1%	45	0	0	5.1	67.8	8.3
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	948	2080	2080	45.6%	-	-	-	0.5	1.8	7.5
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	721	1940	1940	37.2%	-	-	-	0.3	1.5	0.3
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	46	-	840	1940:1940	440+613	79.8 : 79.8%	-	-	-	4.7	20.3	15.9
3/3	Carmen Rd S Ahead	U	C2:6		1	46	-	544	1940	821	66.2%	-	-	-	4.8	32.0	14.3
3/4	Carmen Rd S Right	O	C2:8		1	15	-	231	1940	280	82.6%	0	227	4	5.1	80.1	9.0
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	822	2080	2080	39.5%	-	-	-	0.3	1.5	5.7

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4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	324	1940	1940	16.7%	-	-	-	0.1	1.1	0.1	
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	32:15	0	526	2080:2080	547+104	80.8 : 80.8%	-	-	-	7.4	50.4	16.3
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	32	-	449	1940	577	77.8%	-	-	-	6.2	49.4	14.3
5/4	Mains S Rd Westbound Right	O	C2:5		1	10	-	155	1940	192	80.6%	0	152	3	4.0	92.8	6.5
6/1	Carmen Rd S Departure	U	-		-	-	-	434	1940	1940	22.4%	-	-	-	0.1	1.2	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	590	1940	1940	30.4%	-	-	-	0.2	1.3	0.2
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	46	0	743	2080	881	84.4%	-	-	-	8.5	41.3	23.0
7/2	Shands Rd N Ahead	U	C2:7		1	46	-	687	1940	821	83.6%	-	-	-	7.9	41.5	21.4
7/3	Shands Rd N Right	O	C2:9		1	15	-	198	1940	280	70.8%	0	194	4	3.7	66.7	7.0
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	629	2080	2080	30.2%	-	-	-	0.2	1.2	1.4
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	493	1940	1940	25.4%	-	-	-	0.2	1.2	0.2
Ped Link: P1	Shands Rd	-	C2:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Mains S Rd	-	C2:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>85.3%</b>	<b>553</b>	<b>0</b>	<b>0</b>	<b>10.2</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	312	1940	366	85.3%	312	0	0	4.8	55.7	11.0
2/1	Chalmers St Departure	U	-		-	-	-	445	1940	1940	22.9%	-	-	-	0.1	1.2	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	920	2080	2080	44.2%	-	-	-	0.4	1.6	0.4

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3/2	Carmen Rd N Ahead	U	-	-	-	-	749	1940	1940	38.6%	-	-	-	0.3	1.5	10.1
4/1	Carmen Rd Departure	U	-	-	-	-	961	2080	2080	46.2%	-	-	-	0.4	1.6	0.4
4/2	Carmen Rd Departure	U	-	-	-	-	816	1940	1940	42.1%	-	-	-	0.4	1.6	5.8
5/1	Carmen Rd South Ahead	U	-	-	-	-	1409	1940	1940	72.6%	-	-	-	1.3	3.4	1.3
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	447	1940:1940	484+566	42.6 : 42.6%	241	0	0	1.7	13.4	5.5
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	840	1940	1940	43.3%	-	-	-	0.4	1.6	0.4
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	775	1940	1940	39.9%	-	-	-	0.3	1.5	0.3
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>21.2%</b>	<b>153</b>	<b>0</b>	<b>0</b>	<b>0.5</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	49	1940	1940	2.5%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	153	1940	721	21.2%	153	0	0	0.1	3.2	0.1
3/1	Mall Entry Left Ahead	U	-	-	-	-	371	2080	2080	17.8%	-	-	-	0.1	1.1	0.1
3/2	Mall Entry Ahead	U	-	-	-	-	113	1940	1940	5.8%	-	-	-	0.0	1.0	0.0
4/1	Mall Exit Ahead	U	-	-	-	-	364	2080	2080	17.5%	-	-	-	0.1	1.0	0.1
4/2	Mall Exit Ahead	U	-	-	-	-	224	1940	1940	11.5%	-	-	-	0.1	1.0	0.1
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		20.0		Total Delay for Signalled Lanes (pcuHr):		25.34		Cycle Time (s):		111				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		6.7		Total Delay for Signalled Lanes (pcuHr):		61.88		Cycle Time (s):		111				
		PRC Over All Lanes (%):		5.5		Total Delay Over All Lanes(pcuHr):		100.94								

## Appendix A

**Network Summary**

<b>Controller</b>	<b>Stream</b>	<b>PRC (%)</b>	<b>Total Delay for stream (pcuHr)</b>
C1 - Mains S Rd / Chalmers St	1	19.99	25.34
C2 - Mains S Rd / Shands Rd	1	6.68	61.88
<b>Total Network Delay:</b> 100.94 pcuHr			
<b>Worst PRC:</b> 5.53 % (On Lane J3:1/1)			
<b>Level Of Service:</b> D			

Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead Arm J1:8 Left	Inf Inf	68.0 % 32.0 %	2080	2080
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:2 Left Arm J1:3 Ahead	Inf Inf	26.2 % 73.8 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940



## Appendix A

Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead Arm J2:8 Left	Inf Inf	100.0 % 0.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

Appendix A

J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	22.2 % 77.8 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	13.2 % 86.8 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

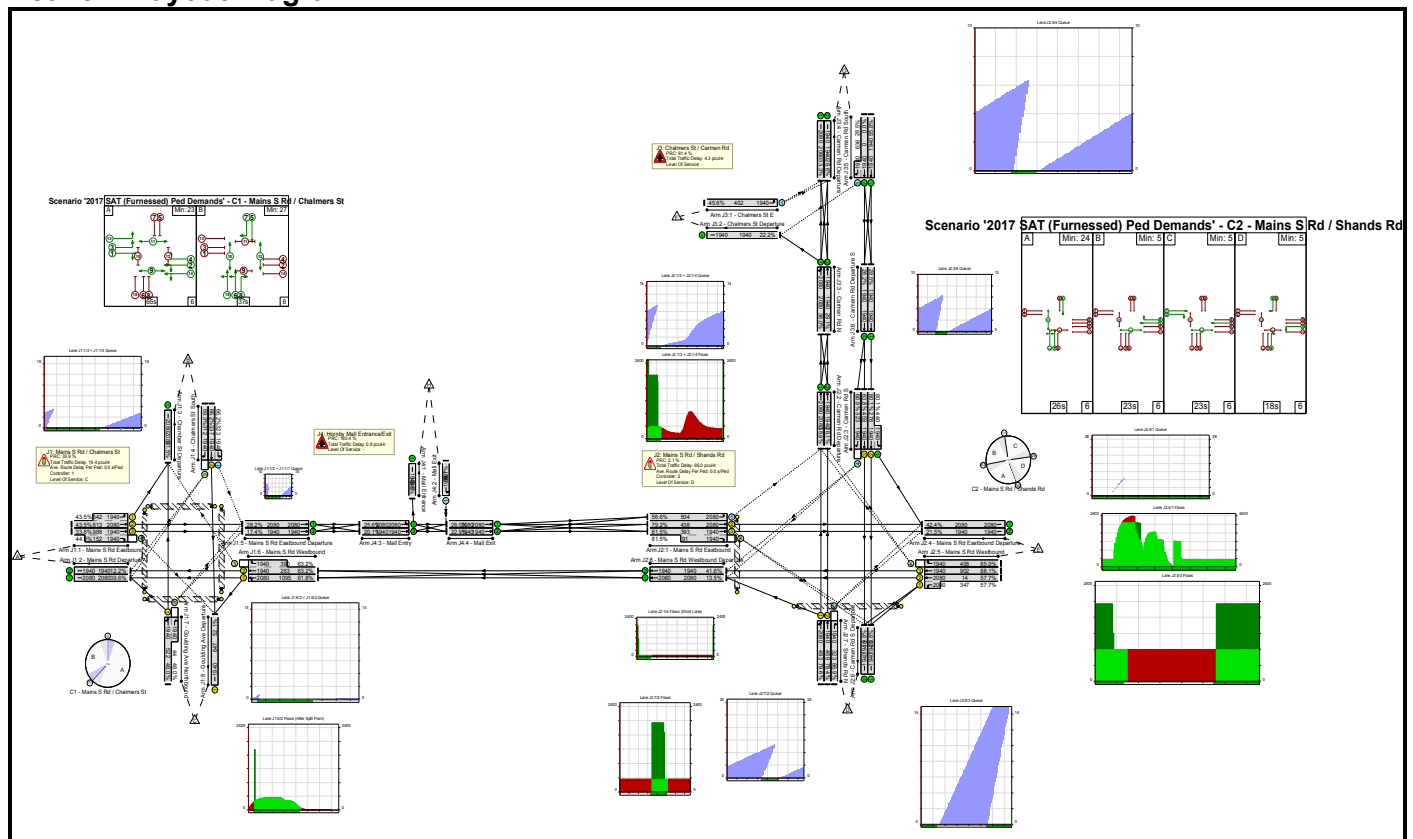
Appendix A

Travel Time Matrix, Delay Per PCU

Delay Per PCU :

	A	B	C	D	E	F	G	H
A	0.0	27.4	100.4	0.0	79.8	0.0	39.2	27.5
B	41.6	0.0	43.6	101.7	104.6	0.0	0.0	0.0
C	21.8	22.1	0.0	0.0	121.1	0.0	47.0	28.4
D	0.0	0.0	0.0	0.0	68.0	45.8	46.2	0.0
E	62.2	74.6	99.1	57.5	0.0	97.2	97.5	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	57.3	0.0
G	92.1	0.0	122.3	38.2	18.5	23.1	0.0	0.0
H	0.0	0.0	0.0	67.1	71.3	0.0	21.2	0.0

Scenario 11: '2017 SAT (Furnished) Ped Demands' (FG2: '2017 SAT Flow', Plan 1: 'Plan 1 - Ped Demands')  
Network Layout Diagram



Appendix A  
**Network Results**

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	88.1%	1339	1114	19	90.6	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	66.2%	621	108	5	19.4	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	65:59	59	590	2080:1940	813+542	43.5 : 43.5%	-	-	-	2.5	15.5	6.0
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	65	-	402	1940:1940	988+152	33.8 : 44.9%	32	31	5	1.8	16.4	5.6
2/1	Mains S Rd Departure	U	-		-	-	-	823	2080	2080	39.6%	-	-	-	0.3	1.4	2.8
2/2	Mains S Rd Departure	U	-		-	-	-	237	1940	1940	12.2%	-	-	-	0.1	1.1	0.1
3/1	Chamber St Departure	U	-		-	-	-	655	2080	2080	31.5%	-	-	-	0.2	1.3	0.2
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	37	-	437	1940:1940	337+323	66.2 : 66.2%	205	9	0	3.6	30.0	10.4
4/3	Chalmers St South Right	O	C1:7		1	37	-	185	1940	312	59.3%	117	68	0	2.5	49.3	5.8
5/1	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	586	2080	2080	28.2%	-	-	-	0.2	1.2	0.2
5/2	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	337	1940	1940	17.4%	-	-	-	0.1	1.1	0.1
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	59	59	677	2080	1095	61.8%	-	-	-	1.9	10.0	6.8
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	59	-	412	1940:1940	263+390	63.2 : 63.2%	246	0	0	1.2	10.4	1.7

Appendix A

7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	31:37	31	272	1940:1940	522+44	48.0 : 48.0%	21	0	0	3.0	39.7	7.1
8/1	Goulding Ave Departure	U	C1:5		1	37	-	337	1940	647	52.1%	-	-	-	1.8	19.3	5.0
Ped Link: P1	Mains S Rd	-	C1:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Chalmers St Crossing	-	C1:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Goulding Ave	-	C1:9		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>88.1%</b>	<b>183</b>	<b>1006</b>	<b>15</b>	<b>66.0</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	285	2080	504	56.6%	109	176	0	1.6	20.3	7.4
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	23	-	347	2080	438	79.2%	-	-	-	5.8	60.2	12.1
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	23	-	394	1940:1940	393+91	81.5 : 81.5%	74	0	0	6.5	59.1	11.7
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	807	2080	2080	38.8%	-	-	-	0.3	1.5	6.2
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	507	1940	1940	26.1%	-	-	-	0.2	1.3	0.2
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	26	-	573	1940:1940	276+440	80.1 : 80.1%	-	-	-	4.4	27.6	10.3
3/3	Carmen Rd S Ahead	U	C2:6		1	26	-	293	1940	459	63.8%	-	-	-	4.1	49.8	9.2
3/4	Carmen Rd S Right	O	C2:8		1	18	-	216	1940	323	66.8%	0	212	4	3.7	61.0	7.3
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	882	2080	2080	42.4%	-	-	-	0.4	1.7	9.3

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4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	418	1940	1940	21.5%	-	-	-	0.1	1.2	0.1	
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	52:18	0	208	2080:2080	14+347	57.7 : 57.7%	-	-	-	3.2	55.1	6.5
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	52	-	795	1940	902	88.1%	-	-	-	9.6	43.5	26.2
5/4	Mains S Rd Westbound Right	O	C2:5		1	23	-	347	1940	408	85.0%	0	341	6	6.8	70.3	13.1
6/1	Carmen Rd S Departure	U	-		-	-	-	404	1940	1940	20.8%	-	-	-	0.1	1.2	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	384	1940	1940	19.8%	-	-	-	0.1	1.2	0.1
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	26	20	392	2080	493	79.6%	-	-	-	6.3	58.2	13.5
7/2	Shands Rd N Ahead	U	C2:7		1	26	-	360	1940	459	78.4%	-	-	-	5.8	58.2	12.3
7/3	Shands Rd N Right	O	C2:9		1	18	-	281	1940	323	86.9%	0	276	5	6.5	83.7	11.6
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	281	2080	2080	13.5%	-	-	-	0.1	1.0	0.1
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	808	1940	1940	41.6%	-	-	-	0.4	1.6	0.4
Ped Link: P1	Shands Rd	-	C2:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Mains S Rd	-	C2:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>55.8%</b>	<b>364</b>	<b>0</b>	<b>0</b>	<b>4.3</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	183	1940	402	45.6%	183	0	0	1.2	24.4	4.0
2/1	Chalmers St Departure	U	-		-	-	-	431	1940	1940	22.2%	-	-	-	0.1	1.2	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	749	2080	2080	36.0%	-	-	-	0.3	1.4	0.3

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3/2	Carmen Rd N Ahead	U	-	-	-	-	565	1940	1940	29.1%	-	-	-	0.2	1.5	7.8
4/1	Carmen Rd Departure	U	-	-	-	-	693	2080	2080	33.3%	-	-	-	0.2	1.3	0.2
4/2	Carmen Rd Departure	U	-	-	-	-	554	1940	1940	28.6%	-	-	-	0.2	1.3	2.9
5/1	Carmen Rd South Ahead	U	-	-	-	-	1082	1940	1940	55.8%	-	-	-	0.6	2.1	0.6
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	181	1940:1940	0+636	0.0 : 28.5%	181	0	0	1.0	19.6	3.5
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	573	1940	1940	29.5%	-	-	-	0.2	1.3	0.2
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	509	1940	1940	26.2%	-	-	-	0.2	1.3	0.2
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>30.7%</b>	<b>172</b>	<b>0</b>	<b>0</b>	<b>0.9</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	69	1940	1940	3.6%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	172	1940	561	30.7%	172	0	0	0.2	4.6	0.2
3/1	Mall Entry Left Ahead	U	-	-	-	-	533	2080	2080	25.6%	-	-	-	0.2	1.2	0.2
3/2	Mall Entry Ahead	U	-	-	-	-	390	1940	1940	20.1%	-	-	-	0.1	1.2	0.1
4/1	Mall Exit Ahead	U	-	-	-	-	582	2080	2080	28.0%	-	-	-	0.2	1.2	0.2
4/2	Mall Exit Ahead	U	-	-	-	-	444	1940	1940	22.9%	-	-	-	0.1	1.2	0.1
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		35.9		Total Delay for Signalled Lanes (pcuHr):		18.42		Cycle Time (s):		114				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		2.1		Total Delay for Signalled Lanes (pcuHr):		62.62		Cycle Time (s):		114				
		PRC Over All Lanes (%):		2.1		Total Delay Over All Lanes(pcuHr):		90.56								

## Appendix A

**Network Summary**

<b>Controller</b>	<b>Stream</b>	<b>PRC (%)</b>	<b>Total Delay for stream (pcuHr)</b>
C1 - Mains S Rd / Chalmers St	1	35.85	18.42
C2 - Mains S Rd / Shands Rd	1	2.11	62.62
<b>Total Network Delay:</b> 90.56 pcuHr			
<b>Worst PRC:</b> 2.11 % (On Lane J2:5/3 in Stream 1)			
<b>Level Of Service:</b> D			



Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead Arm J1:8 Left	Inf Inf	93.2 % 6.8 %	2080	2080
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right Arm J1:2 Left	Inf Inf	100.0 % 31.1 %	1940	1940
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:3 Ahead	Inf	68.9 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

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Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead Arm J2:8 Left	Inf Inf	82.1 % 17.9 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

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J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	33.4 % 66.6 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	0.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	12.9 % 87.1 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

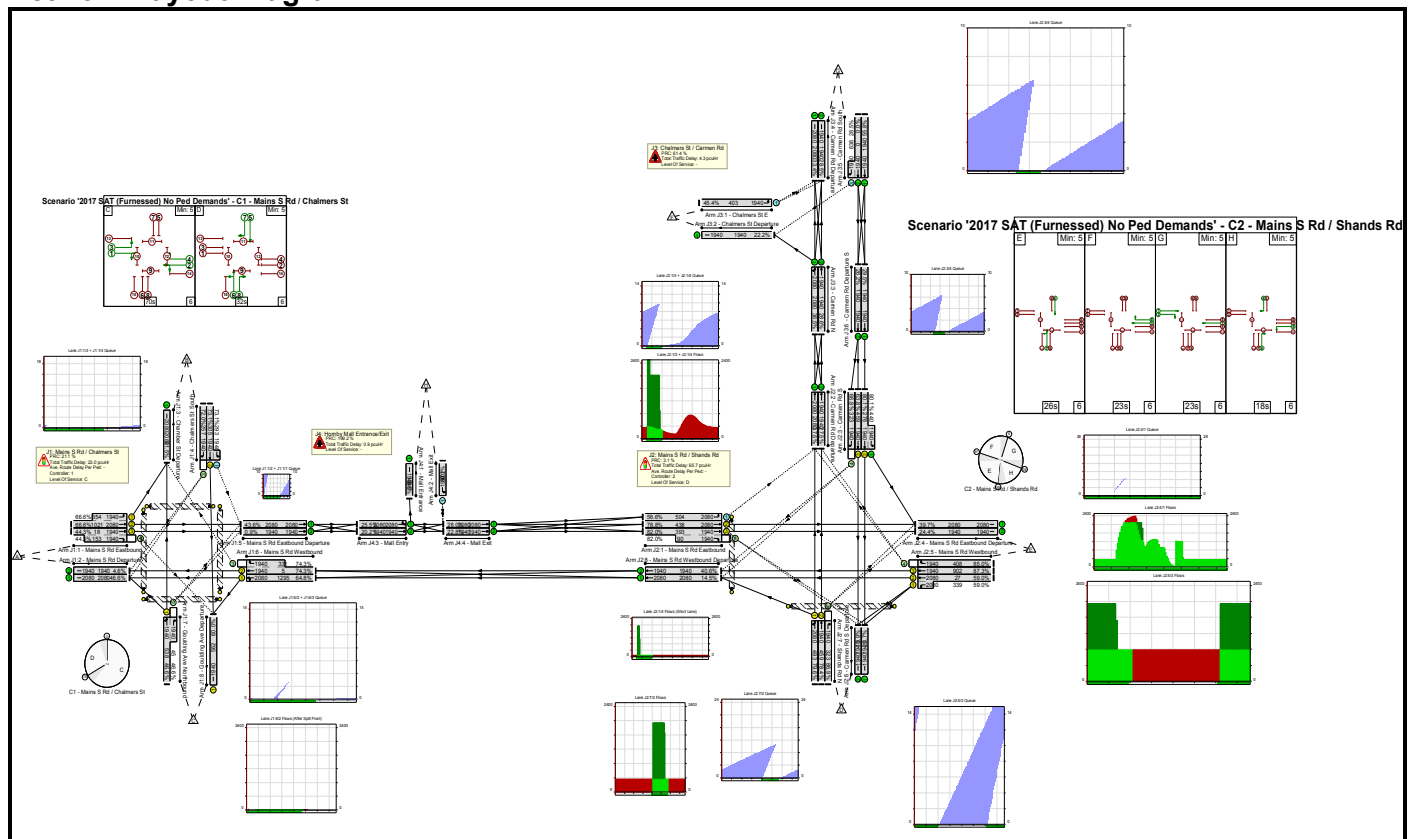
Appendix A

Travel Time Matrix, Delay Per PCU

Delay Per PCU :

	A	B	C	D	E	F	G	H
A	0.0	18.2	67.9	0.0	79.0	0.0	45.7	17.9
B	50.6	0.0	49.2	87.0	87.8	41.1	41.2	0.0
C	41.4	41.2	0.0	0.0	91.9	0.0	53.0	40.1
D	97.4	103.8	149.1	0.0	85.1	62.1	62.4	0.0
E	53.0	57.4	84.7	56.7	0.0	74.2	74.3	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	25.7	0.0
G	76.3	0.0	90.3	54.4	18.6	20.7	0.0	0.0
H	0.0	0.0	0.0	63.7	68.8	0.0	27.1	0.0

Scenario 12: '2017 SAT (Furnished) No Ped Demands' (FG2: '2017 SAT Flow', Plan 2: 'Plan 2 - No Ped Demands')  
Network Layout Diagram



Appendix A  
**Network Results**

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	87.3%	1432	1015	26	93.8	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	74.3%	714	9	11	23.0	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	70	0	916	2080:1940	1021+354	66.6 : 66.6%	-	-	-	4.0	15.7	15.3
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	70	-	76	1940:1940	18+153	44.3 : 44.3%	57	0	11	0.7	34.1	1.2
2/1	Mains S Rd Departure	U	-		-	-	-	970	2080	2080	46.6%	-	-	-	0.4	1.6	0.4
2/2	Mains S Rd Departure	U	-		-	-	-	90	1940	1940	4.6%	-	-	-	0.0	1.0	0.0
3/1	Chamber St Departure	U	-		-	-	-	655	2080	2080	31.5%	-	-	-	0.2	1.3	0.2
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	32	-	437	1940:1940	305+293	73.1 : 73.1%	205	9	0	4.5	36.7	11.4
4/3	Chalmers St South Right	O	C1:7		1	32	-	185	1940	257	72.0%	185	0	0	3.6	69.4	6.6
5/1	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	906	2080	2080	43.6%	-	-	-	0.4	1.6	6.2
5/2	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	17	1940	1940	0.9%	-	-	-	0.0	0.9	0.0
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	70	0	839	2080	1295	64.8%	-	-	-	1.9	8.1	4.8
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	70	-	250	1940:1940	5+331	74.3 : 74.3%	246	0	0	2.1	30.4	4.3

Appendix A

7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	32	0	272	1940:1940	538+45	46.6 : 46.6%	21	0	0	2.9	38.9	7.0
8/1	Goulding Ave Departure	U	C1:5		1	32	-	337	1940	562	60.0%	-	-	-	2.2	23.5	5.1
Ped Link: P1	Mains S Rd	-	C1:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Chalmers St Crossing	-	C1:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P4	Goulding Ave	-	C1:9		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>87.3%</b>	<b>183</b>	<b>1006</b>	<b>15</b>	<b>65.7</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	285	2080	504	56.6%	109	176	0	1.5	18.4	6.9
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	23	-	345	2080	438	78.8%	-	-	-	5.7	59.3	11.9
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	23	-	396	1940:1940	393+90	82.0 : 82.0%	74	0	0	6.7	60.7	12.0
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	781	2080	2080	37.5%	-	-	-	0.3	1.5	6.2
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	533	1940	1940	27.5%	-	-	-	0.2	1.3	0.2
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	26	-	573	1940:1940	276+440	80.1 : 80.1%	-	-	-	4.4	27.6	10.3
3/3	Carmen Rd S Ahead	U	C2:6		1	26	-	293	1940	459	63.8%	-	-	-	4.1	49.8	9.2
3/4	Carmen Rd S Right	O	C2:8		1	18	-	216	1940	323	66.8%	0	212	4	3.7	61.0	7.3
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	826	2080	2080	39.7%	-	-	-	0.4	1.6	9.2

Appendix A

4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	-	474	1940	1940	24.4%	-	-	-	0.2	1.2	0.2
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	52:18	0	216	2080:2080	27+339	59.0 : 59.0%	-	-	-	3.3	55.0	6.7
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	52	-	787	1940	902	87.3%	-	-	-	9.2	42.3	25.5
5/4	Mains S Rd Westbound Right	O	C2:5		1	23	-	347	1940	408	85.0%	0	341	6	6.8	70.3	13.1
6/1	Carmen Rd S Departure	U	-		-	-	-	401	1940	1940	20.7%	-	-	-	0.1	1.2	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	387	1940	1940	19.9%	-	-	-	0.1	1.2	0.1
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	26	0	392	2080	493	79.6%	-	-	-	6.3	58.2	13.5
7/2	Shands Rd N Ahead	U	C2:7		1	26	-	360	1940	459	78.4%	-	-	-	5.8	58.2	12.3
7/3	Shands Rd N Right	O	C2:9		1	18	-	281	1940	323	86.9%	0	276	5	6.5	83.7	11.6
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	301	2080	2080	14.5%	-	-	-	0.1	1.0	0.1
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	788	1940	1940	40.6%	-	-	-	0.3	1.6	0.3
Ped Link: P1	Shands Rd	-	C2:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Mains S Rd	-	C2:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>55.8%</b>	<b>364</b>	<b>0</b>	<b>0</b>	<b>4.3</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	183	1940	403	45.4%	183	0	0	1.2	24.1	3.9
2/1	Chalmers St Departure	U	-		-	-	-	431	1940	1940	22.2%	-	-	-	0.1	1.2	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	759	2080	2080	36.5%	-	-	-	0.3	1.4	0.3

Appendix A

3/2	Carmen Rd N Ahead	U	-	-	-	-	555	1940	1940	28.6%	-	-	-	0.2	1.4	6.8		
4/1	Carmen Rd Departure	U	-	-	-	-	694	2080	2080	33.4%	-	-	-	0.3	1.3	0.3		
4/2	Carmen Rd Departure	U	-	-	-	-	553	1940	1940	28.5%	-	-	-	0.2	1.3	2.9		
5/1	Carmen Rd South Ahead	U	-	-	-	-	1082	1940	1940	55.8%	-	-	-	0.6	2.1	0.6		
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	181	1940:1940	0+636	0.0 : 28.5%	181	0	0	1.0	19.2	3.4		
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	573	1940	1940	29.5%	-	-	-	0.2	1.3	0.2		
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	509	1940	1940	26.2%	-	-	-	0.2	1.3	0.2		
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>30.1%</b>	<b>172</b>	<b>0</b>	<b>0</b>	<b>0.9</b>	-	-		
1/1	Mall Entrance	U	-	-	-	-	69	1940	1940	3.6%	-	-	-	0.0	1.0	0.0		
2/1	Mall Exit Left	O	-	-	-	-	172	1940	572	30.1%	172	0	0	0.2	4.5	0.2		
3/1	Mall Entry Left Ahead	U	-	-	-	-	531	2080	2080	25.5%	-	-	-	0.2	1.2	0.2		
3/2	Mall Entry Ahead	U	-	-	-	-	392	1940	1940	20.2%	-	-	-	0.1	1.2	0.1		
4/1	Mall Exit Ahead	U	-	-	-	-	583	2080	2080	28.0%	-	-	-	0.2	1.2	0.2		
4/2	Mall Exit Ahead	U	-	-	-	-	443	1940	1940	22.8%	-	-	-	0.1	1.2	0.1		
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):					21.1	Total Delay for Signalled Lanes (pcuHr):					21.88	Cycle Time (s): 114				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):					3.1	Total Delay for Signalled Lanes (pcuHr):					62.48	Cycle Time (s): 114				
		PRC Over All Lanes (%):					3.1	Total Delay Over All Lanes(pcuHr):					93.79					



## Appendix A

**Network Summary**

<b>Controller</b>	<b>Stream</b>	<b>PRC (%)</b>	<b>Total Delay for stream (pcuHr)</b>
C1 - Mains S Rd / Chalmers St	1	21.15	21.88
C2 - Mains S Rd / Shands Rd	1	3.14	62.48
<b>Total Network Delay:</b> 93.79 pcuHr			
<b>Worst PRC:</b> 3.14 % (On Lane J2:5/3 in Stream 1)			
<b>Level Of Service:</b> D			

Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead Arm J1:8 Left	Inf Inf	94.5 % 5.5 %	2080	2080
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:2 Left Arm J1:3 Ahead	Inf Inf	31.1 % 68.9 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

## Appendix A

Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead Arm J2:8 Left	Inf Inf	82.1 % 17.9 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

Appendix A

J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	32.9 % 67.1 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	0.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	13.0 % 87.0 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

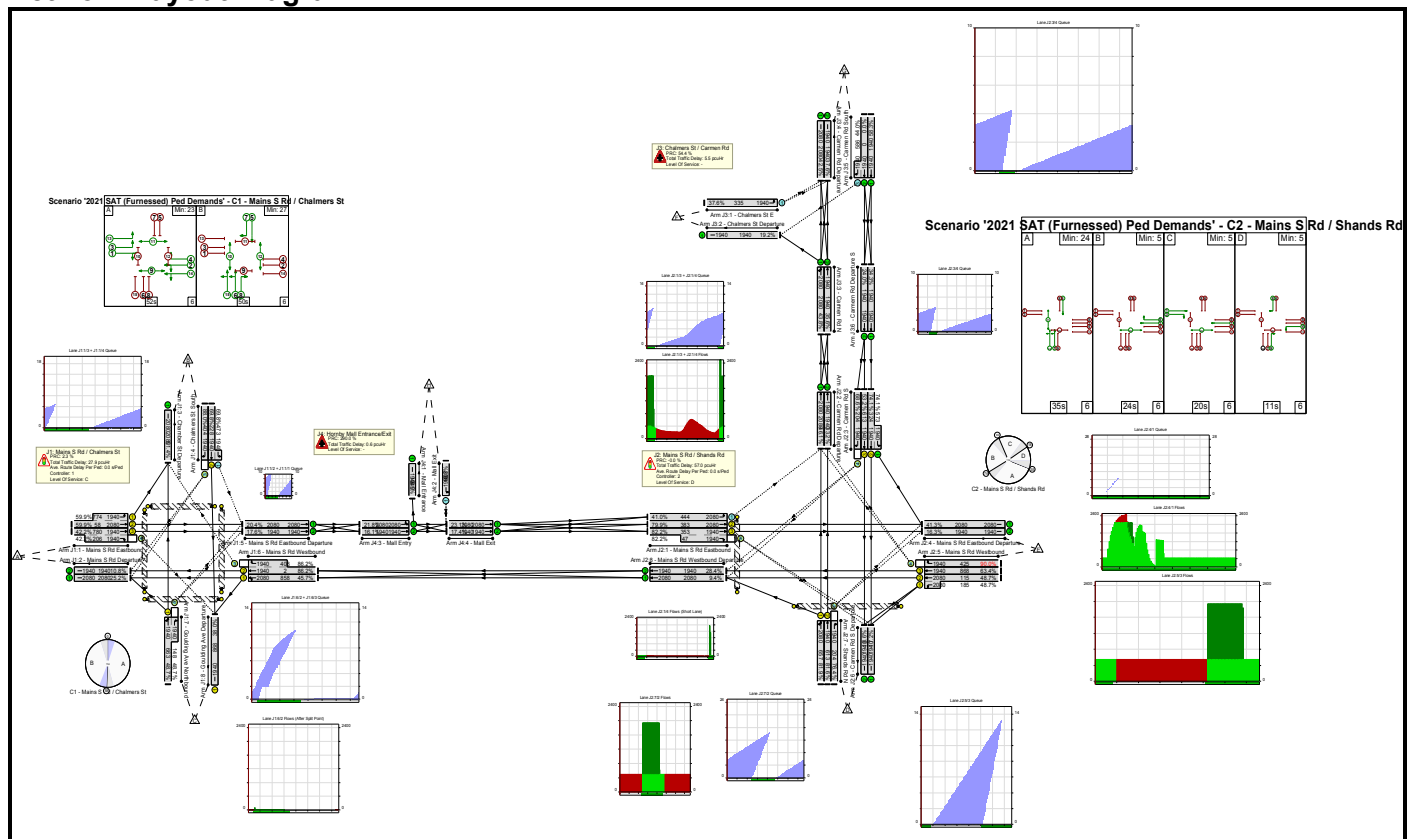
Appendix A

Travel Time Matrix, Delay Per PCU

Delay Per PCU :

	A	B	C	D	E	F	G	H
A	0.0	15.9	86.2	0.0	84.0	0.0	45.2	19.8
B	70.7	0.0	59.1	88.7	89.3	45.9	46.0	0.0
C	40.4	40.1	0.0	0.0	84.7	0.0	55.9	42.9
D	84.1	121.3	147.3	0.0	85.0	62.1	62.3	0.0
E	50.3	75.0	83.3	56.8	0.0	74.2	74.2	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	25.4	0.0
G	79.5	0.0	101.3	54.4	18.5	20.3	0.0	0.0
H	0.0	0.0	0.0	64.1	68.7	0.0	25.9	0.0

Scenario 13: '2021 SAT (Furnished) Ped Demands' (FG5: '2021 SAT Base', Plan 1: 'Plan 1 - Ped Demands')  
Network Layout Diagram



Appendix A  
**Network Results**

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	<b>90.0%</b>	<b>1694</b>	<b>893</b>	<b>12</b>	<b>91.1</b>	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	<b>88.0%</b>	<b>1064</b>	<b>132</b>	<b>0</b>	<b>27.9</b>	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	52:46	46	499	2080:1940	58+774	59.9 : 59.9%	-	-	-	4.3	30.8	12.2
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	52	-	416	1940:1940	780+206	42.2 : 42.2%	37	50	0	2.6	22.4	7.0
2/1	Mains S Rd Departure	U	-		-	-	-	525	2080	2080	25.2%	-	-	-	0.2	1.2	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	210	1940	1940	10.8%	-	-	-	0.1	1.0	0.1
3/1	Chamber St Departure	U	-		-	-	-	1069	2080	2080	51.4%	-	-	-	0.8	2.8	16.2
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	50	-	489	1940:1940	228+473	69.8 : 69.8%	316	14	0	2.3	17.0	6.8
4/3	Chalmers St South Right	O	C1:7		1	50	-	355	1940	404	88.0%	287	68	0	6.7	67.7	13.7
5/1	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	424	2080	2080	20.4%	-	-	-	0.1	1.1	0.1
5/2	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	342	1940	1940	17.6%	-	-	-	0.1	1.1	0.1
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	46	46	392	2080	858	45.7%	-	-	-	1.0	9.5	4.7
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	46	-	354	1940:1940	2+408	86.2 : 86.2%	352	0	0	4.6	46.3	13.6

Appendix A

7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	44:50	44	395	1940:1940	663+148	48.7 : 48.7%	72	0	0	3.2	29.0	8.4
8/1	Goulding Ave Departure	U	C1:5		1	50	-	330	1940	868	38.0%	-	-	-	2.0	22.0	8.5
Ped Link: P1	Mains S Rd	-	C1:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Chalmers St Crossing	-	C1:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Goulding Ave	-	C1:9		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>90.0%</b>	<b>127</b>	<b>761</b>	<b>12</b>	<b>57.0</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	182	2080	444	41.0%	88	94	0	0.6	12.0	3.2
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	20	-	306	2080	383	79.9%	-	-	-	5.4	64.0	11.2
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	20	-	329	1940:1940	353+47	82.2 : 82.2%	39	0	0	5.9	64.9	11.0
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	958	2080	2080	46.1%	-	-	-	0.5	1.9	9.7
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	645	1940	1940	33.2%	-	-	-	0.2	1.4	0.2
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	35	-	665	1940:1940	324+573	74.1 : 74.1%	-	-	-	3.6	19.3	9.9
3/3	Carmen Rd S Ahead	U	C2:6		1	35	-	326	1940	613	53.2%	-	-	-	3.5	38.3	9.0
3/4	Carmen Rd S Right	O	C2:8		1	11	-	140	1940	204	68.6%	0	138	2	3.0	76.3	5.3
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	860	2080	2080	41.3%	-	-	-	0.4	1.7	9.1

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4/2	Mains S Rd Eastbound Departure	U	-		-	-	-	317	1940	1940	16.3%	-	-	-	0.1	1.1	0.1
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	50:11	0	146	2080:2080	115+185	48.7 : 48.7%	-	-	-	1.9	47.9	3.1
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	50	-	550	1940	868	63.4%	-	-	-	4.6	29.9	14.2
5/4	Mains S Rd Westbound Right	O	C2:5		1	24	-	383	1940	425	90.0%	0	376	7	8.4	79.2	15.5
6/1	Carmen Rd S Departure	U	-		-	-	-	334	1940	1940	17.2%	-	-	-	0.1	1.1	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	361	1940	1940	18.6%	-	-	-	0.1	1.1	0.1
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	35	29	538	2080	657	81.9%	-	-	-	7.6	50.6	17.9
7/2	Shands Rd N Ahead	U	C2:7		1	35	-	500	1940	613	81.6%	-	-	-	7.1	51.3	16.7
7/3	Shands Rd N Right	O	C2:9		1	11	-	156	1940	204	76.4%	0	153	3	3.7	84.7	6.3
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	196	2080	2080	9.4%	-	-	-	0.1	1.0	0.1
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	550	1940	1940	28.4%	-	-	-	0.2	1.3	0.2
Ped Link: P1	Shands Rd	-	C2:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Mains S Rd	-	C2:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>58.3%</b>	<b>384</b>	<b>0</b>	<b>0</b>	<b>5.5</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	126	1940	335	37.6%	126	0	0	1.0	27.9	2.9
2/1	Chalmers St Departure	U	-		-	-	-	373	1940	1940	19.2%	-	-	-	0.1	1.1	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	912	2080	2080	43.8%	-	-	-	0.4	1.5	0.4



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3/2	Carmen Rd N Ahead	U	-	-	-	-	691	1940	1940	35.6%	-	-	-	0.3	1.7	12.2		
4/1	Carmen Rd Departure	U	-	-	-	-	885	2080	2080	42.5%	-	-	-	0.4	1.5	0.4		
4/2	Carmen Rd Departure	U	-	-	-	-	729	1940	1940	37.6%	-	-	-	0.3	1.6	9.0		
5/1	Carmen Rd South Ahead	U	-	-	-	-	1131	1940	1940	58.3%	-	-	-	0.7	2.2	0.7		
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	258	1940:1940	0+586	0.0 : 44.0%	258	0	0	1.9	26.5	6.0		
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	665	1940	1940	34.3%	-	-	-	0.3	1.4	0.3		
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	466	1940	1940	24.0%	-	-	-	0.2	1.2	0.2		
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>23.1%</b>	<b>119</b>	<b>0</b>	<b>0</b>	<b>0.6</b>	-	-		
1/1	Mall Entrance	U	-	-	-	-	68	1940	1940	3.5%	-	-	-	0.0	1.0	0.0		
2/1	Mall Exit Left	O	-	-	-	-	119	1940	638	18.7%	119	0	0	0.1	3.5	0.1		
3/1	Mall Entry Left Ahead	U	-	-	-	-	454	2080	2080	21.8%	-	-	-	0.1	1.1	0.1		
3/2	Mall Entry Ahead	U	-	-	-	-	312	1940	1940	16.1%	-	-	-	0.1	1.1	0.1		
4/1	Mall Exit Ahead	U	-	-	-	-	480	2080	2080	23.1%	-	-	-	0.1	1.1	0.1		
4/2	Mall Exit Ahead	U	-	-	-	-	337	1940	1940	17.4%	-	-	-	0.1	1.1	0.1		
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):						2.3	Total Delay for Signalled Lanes (pcuHr):				26.64	Cycle Time (s):				114
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):						-0.0	Total Delay for Signalled Lanes (pcuHr):				54.70	Cycle Time (s):				114
		PRC Over All Lanes (%):						-0.0	Total Delay Over All Lanes(pcuHr):				91.09					

## Appendix A

**Network Summary**

<b>Controller</b>	<b>Stream</b>	<b>PRC (%)</b>	<b>Total Delay for stream (pcuHr)</b>
C1 - Mains S Rd / Chalmers St	1	2.33	26.64
C2 - Mains S Rd / Shands Rd	1	-0.03	54.70
<b>Total Network Delay:</b> 91.09 pcuHr			
<b>Worst PRC:</b> -0.03 % (On Lane J2:5/4 in Stream 1)			
<b>Level Of Service:</b> D			

Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead Arm J1:8 Left	Inf Inf	78.6 % 21.4 %	2080	2080
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:2 Left Arm J1:3 Ahead	Inf Inf	21.7 % 78.3 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

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Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead Arm J2:8 Left	Inf Inf	100.0 % 0.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

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J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	12.6 % 87.4 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	0.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	15.0 % 85.0 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

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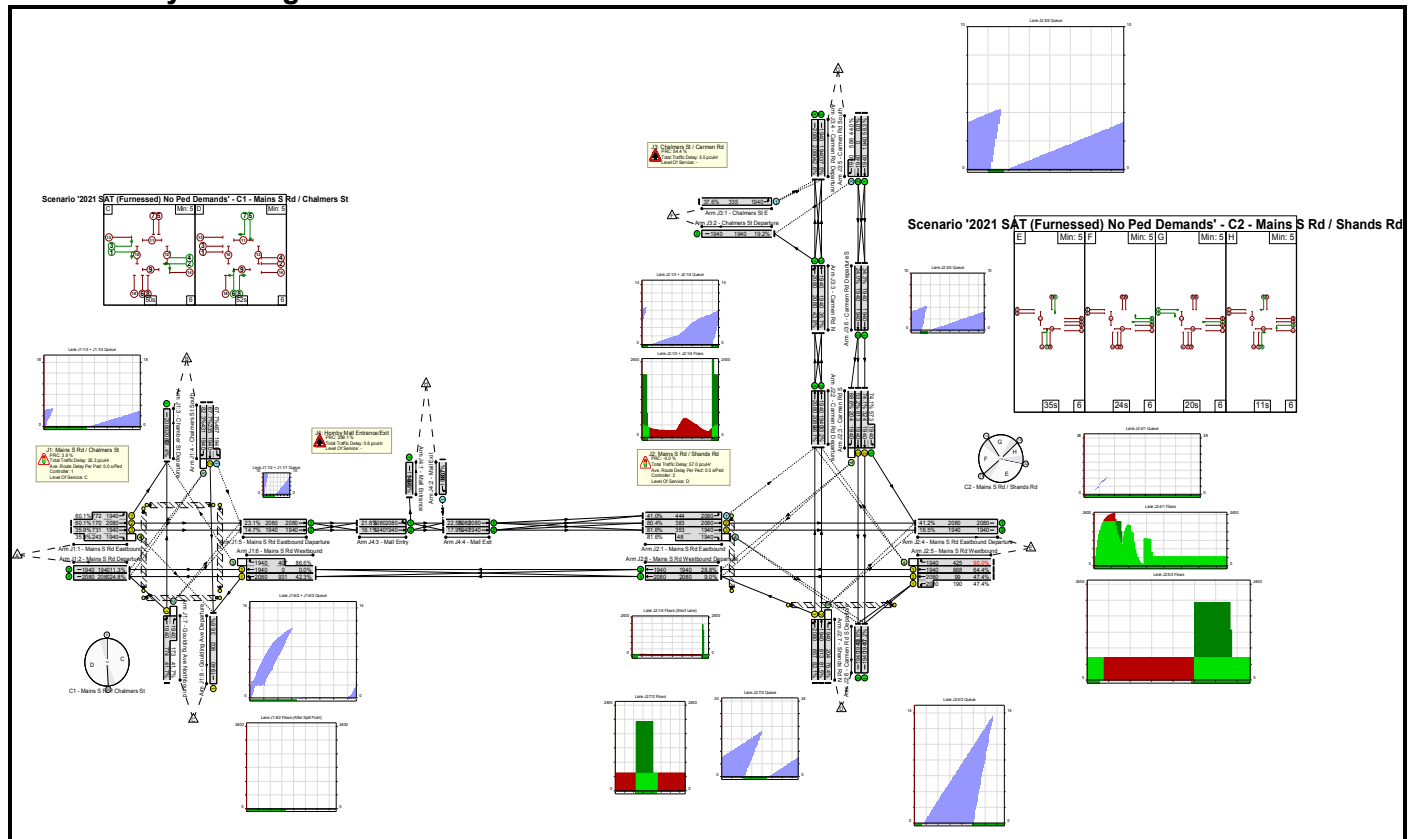
Travel Time Matrix, Delay Per PCU

Delay Per PCU :

	A	B	C	D	E	F	G	H
A	0.0	34.3	66.3	0.0	90.2	0.0	45.4	26.0
B	68.8	0.0	36.6	79.7	83.1	0.0	0.0	0.0
C	30.6	31.2	0.0	0.0	89.0	0.0	43.6	30.5
D	0.0	0.0	0.0	0.0	86.2	55.4	55.9	0.0
E	40.2	80.8	71.2	60.5	0.0	83.4	83.8	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	29.4	0.0
G	94.6	0.0	107.1	43.0	13.8	27.7	0.0	0.0
H	0.0	0.0	0.0	68.5	73.2	0.0	21.4	0.0

Scenario 14: '2021 SAT (Furnished) No Ped Demands' (FG5: '2021 SAT Base', Plan 2: 'Plan 2 - No Ped Demands')

Network Layout Diagram



## Appendix A

## Network Results

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	<b>90.0%</b>	<b>1812</b>	<b>776</b>	<b>12</b>	<b>88.4</b>	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	<b>86.6%</b>	<b>1182</b>	<b>14</b>	<b>0</b>	<b>25.3</b>	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	50	0	566	2080:1940	170+772	60.1 : 60.1%	-	-	-	4.3	27.1	12.1
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	50	-	349	1940:1940	731+243	35.9 : 35.9%	87	0	0	2.3	24.1	5.5
2/1	Mains S Rd Departure	U	-		-	-	-	516	2080	2080	24.8%	-	-	-	0.2	1.2	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	219	1940	1940	11.3%	-	-	-	0.1	1.0	0.1
3/1	Chamber St Departure	U	-		-	-	-	1069	2080	2080	51.4%	-	-	-	0.6	2.1	8.7
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	52	-	489	1940:1940	235+487	67.7 : 67.7%	316	14	0	2.1	15.4	6.3
4/3	Chalmers St South Right	O	C1:7		1	52	-	355	1940	431	82.3%	355	0	0	5.7	57.3	12.3
5/1	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	481	2080	2080	23.1%	-	-	-	0.2	1.1	0.2
5/2	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	285	1940	1940	14.7%	-	-	-	0.1	1.1	0.1
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	50	0	394	2080	931	42.3%	-	-	-	0.8	7.3	3.4
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	50	-	352	1940:1940	0+407	0.0 : 86.6%	352	0	0	4.7	47.9	13.8

Appendix A

7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	52	0	395	1940:1940	774+173	41.7 : 41.7%	72	0	0	2.5	23.0	7.2
8/1	Goulding Ave Departure	U	C1:5		1	52	-	330	1940	902	36.6%	-	-	-	1.9	20.3	8.5
Ped Link: P1	Mains S Rd	-	C1:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Chalmers St Crossing	-	C1:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P4	Goulding Ave	-	C1:9		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>90.0%</b>	<b>127</b>	<b>761</b>	<b>12</b>	<b>57.0</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	182	2080	444	41.0%	88	94	0	0.6	11.6	3.2
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	20	-	308	2080	383	80.4%	-	-	-	5.5	64.1	11.3
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	20	-	327	1940:1940	353+48	81.6 : 81.6%	39	0	0	5.8	63.9	10.8
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	959	2080	2080	46.1%	-	-	-	0.5	1.9	9.7
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	644	1940	1940	33.2%	-	-	-	0.2	1.4	0.2
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	35	-	665	1940:1940	324+573	74.1 : 74.1%	-	-	-	3.6	19.3	9.9
3/3	Carmen Rd S Ahead	U	C2:6		1	35	-	326	1940	613	53.2%	-	-	-	3.5	38.3	9.0
3/4	Carmen Rd S Right	O	C2:8		1	11	-	140	1940	204	68.6%	0	138	2	3.0	76.3	5.3
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	857	2080	2080	41.2%	-	-	-	0.4	1.7	9.2



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4/2	Mains S Rd Eastbound Departure	U	-		-	-	-	320	1940	1940	16.5%	-	-	-	0.1	1.1	0.1
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	50:11	0	137	2080:2080	99+190	47.4 : 47.4%	-	-	-	1.9	49.3	3.1
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	50	-	559	1940	868	64.4%	-	-	-	4.7	30.3	14.6
5/4	Mains S Rd Westbound Right	O	C2:5		1	24	-	383	1940	425	90.0%	0	376	7	8.4	79.2	15.5
6/1	Carmen Rd S Departure	U	-		-	-	-	334	1940	1940	17.2%	-	-	-	0.1	1.1	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	361	1940	1940	18.6%	-	-	-	0.1	1.1	0.1
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	35	0	539	2080	657	82.1%	-	-	-	7.6	50.7	17.9
7/2	Shands Rd N Ahead	U	C2:7		1	35	-	499	1940	613	81.5%	-	-	-	7.1	51.2	16.7
7/3	Shands Rd N Right	O	C2:9		1	11	-	156	1940	204	76.4%	0	153	3	3.7	84.7	6.3
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	187	2080	2080	9.0%	-	-	-	0.0	1.0	0.0
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	559	1940	1940	28.8%	-	-	-	0.2	1.3	0.2
Ped Link: P1	Shands Rd	-	C2:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Mains S Rd	-	C2:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>58.3%</b>	<b>384</b>	<b>0</b>	<b>0</b>	<b>5.5</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	126	1940	335	37.6%	126	0	0	1.0	27.9	2.9
2/1	Chalmers St Departure	U	-		-	-	-	373	1940	1940	19.2%	-	-	-	0.1	1.1	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	911	2080	2080	43.8%	-	-	-	0.4	1.5	0.4

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3/2	Carmen Rd N Ahead	U	-	-	-	-	692	1940	1940	35.7%	-	-	-	0.3	1.7	12.2	
4/1	Carmen Rd Departure	U	-	-	-	-	886	2080	2080	42.6%	-	-	-	0.4	1.5	0.4	
4/2	Carmen Rd Departure	U	-	-	-	-	728	1940	1940	37.5%	-	-	-	0.3	1.5	9.0	
5/1	Carmen Rd South Ahead	U	-	-	-	-	1131	1940	1940	58.3%	-	-	-	0.7	2.2	0.7	
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	258	1940:1940	0+586	0.0 : 44.0%	258	0	0	1.9	26.6	6.0	
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	665	1940	1940	34.3%	-	-	-	0.3	1.4	0.3	
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	466	1940	1940	24.0%	-	-	-	0.2	1.2	0.2	
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>22.5%</b>	<b>119</b>	<b>0</b>	<b>0</b>	<b>0.6</b>	-	-	
1/1	Mall Entrance	U	-	-	-	-	68	1940	1940	3.5%	-	-	-	0.0	1.0	0.0	
2/1	Mall Exit Left	O	-	-	-	-	119	1940	637	18.7%	119	0	0	0.1	3.5	0.1	
3/1	Mall Entry Left Ahead	U	-	-	-	-	454	2080	2080	21.8%	-	-	-	0.1	1.1	0.1	
3/2	Mall Entry Ahead	U	-	-	-	-	312	1940	1940	16.1%	-	-	-	0.1	1.1	0.1	
4/1	Mall Exit Ahead	U	-	-	-	-	469	2080	2080	22.5%	-	-	-	0.1	1.1	0.1	
4/2	Mall Exit Ahead	U	-	-	-	-	348	1940	1940	17.9%	-	-	-	0.1	1.1	0.1	
C1 - Mains S Rd / Chalmers St							PRC for Signalled Lanes (%):		3.9		Total Delay for Signalled Lanes (pcuHr):		24.21		Cycle Time (s):		114
C2 - Mains S Rd / Shands Rd							PRC for Signalled Lanes (%):		-0.0		Total Delay for Signalled Lanes (pcuHr):		54.67		Cycle Time (s):		114
							PRC Over All Lanes (%):		-0.0		Total Delay Over All Lanes(pcuHr):		88.40				

## Appendix A

**Network Summary**

<b>Controller</b>	<b>Stream</b>	<b>PRC (%)</b>	<b>Total Delay for stream (pcuHr)</b>
C1 - Mains S Rd / Chalmers St	1	3.94	24.21
C2 - Mains S Rd / Shands Rd	1	-0.03	54.67
<b>Total Network Delay:</b> 88.40 pcuHr			
<b>Worst PRC:</b> -0.03 % (On Lane J2:5/4 in Stream 1)			
<b>Level Of Service:</b> D			

Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead Arm J1:8 Left	Inf Inf	78.7 % 21.3 %	2080	2080
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	0.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:2 Left Arm J1:3 Ahead	Inf Inf	21.7 % 78.3 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

Appendix A

Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead Arm J2:8 Left	Inf Inf	100.0 % 0.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

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J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	12.6 % 87.4 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	0.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	15.0 % 85.0 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

Appendix A

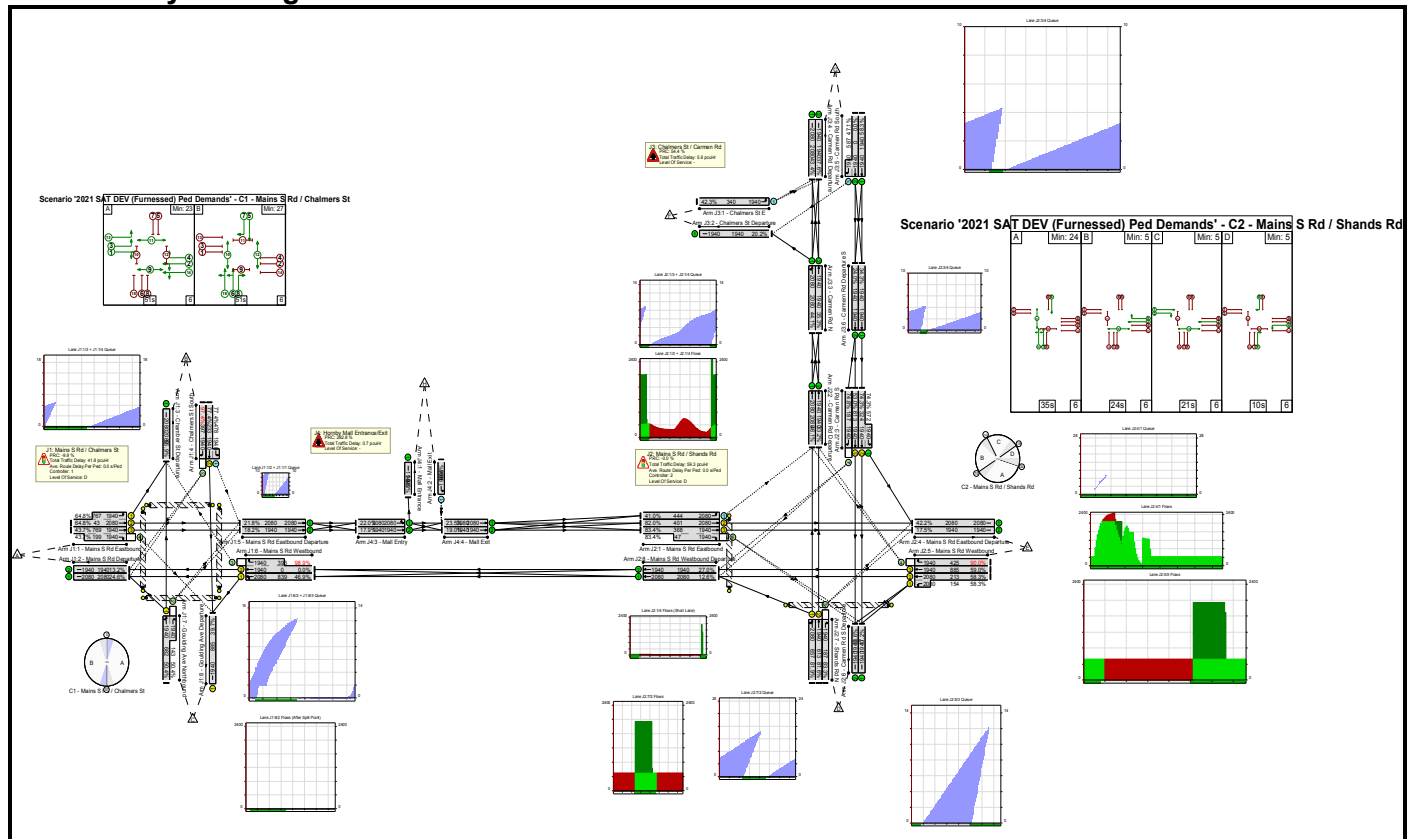
Travel Time Matrix, Delay Per PCU

Delay Per PCU :

	A	B	C	D	E	F	G	H
A	0.0	29.8	66.2	0.0	89.5	0.0	44.8	26.2
B	58.4	0.0	34.2	77.7	81.8	0.0	0.0	0.0
C	24.0	24.6	0.0	0.0	84.4	0.0	40.6	27.0
D	0.0	0.0	0.0	0.0	86.1	55.3	55.9	0.0
E	38.3	81.5	70.9	60.6	0.0	83.4	83.8	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	29.4	0.0
G	92.0	0.0	104.3	43.0	13.8	27.7	0.0	0.0
H	0.0	0.0	0.0	67.9	73.1	0.0	21.2	0.0

Scenario 15: '2021 SAT DEV (Furnished) Ped Demands' (FG6: '2021 SAT Base + Dev', Plan 1: 'Plan 1 - Ped Demands')

Network Layout Diagram



Appendix A  
Network Results

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	<b>98.9%</b>	<b>1765</b>	<b>895</b>	<b>87</b>	<b>107.7</b>	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	<b>98.9%</b>	<b>1098</b>	<b>135</b>	<b>75</b>	<b>41.8</b>	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	51:45	45	525	2080:1940	43+767	64.8 : 64.8%	-	-	-	4.8	33.2	13.7
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	51	-	423	1940:1940	769+199	43.7 : 43.7%	37	50	0	2.7	23.3	7.3
2/1	Mains S Rd Departure	U	-		-	-	-	511	2080	2080	24.6%	-	-	-	0.2	1.1	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	256	1940	1940	13.2%	-	-	-	0.1	1.1	0.1
3/1	Chamber St Departure	U	-		-	-	-	1163	2080	2080	55.9%	-	-	-	1.1	3.4	20.4
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	51	-	550	1940:1940	233+478	77.4 : 77.4%	354	16	0	3.2	21.1	9.1
4/3	Chalmers St South Right	O	C1:7		1	51	-	387	1940	397	<b>97.4%</b>	285	68	34	11.6	107.7	19.6
5/1	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	453	2080	2080	21.8%	-	-	-	0.1	1.1	0.1
5/2	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	353	1940	1940	18.2%	-	-	-	0.1	1.1	0.1
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	45	45	394	2080	839	46.9%	-	-	-	1.2	10.8	5.4
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	45	-	392	1940:1940	0+396	<b>0.0 : 98.9%</b>	351	0	41	11.3	104.1	21.3



Appendix A

7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	45:51	45	416	1940:1940	682+143	50.4 : 50.4%	72	0	0	3.3	28.7	9.0
8/1	Goulding Ave Departure	U	C1:5		1	51	-	351	1940	885	39.7%	-	-	-	2.0	20.9	8.6
Ped Link: P1	Mains S Rd	-	C1:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Chalmers St Crossing	-	C1:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Goulding Ave	-	C1:9		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>90.0%</b>	<b>127</b>	<b>761</b>	<b>12</b>	<b>59.3</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	182	2080	444	41.0%	88	94	0	0.6	11.7	3.1
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	21	-	329	2080	401	82.0%	-	-	-	6.0	65.7	12.0
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	21	-	346	1940:1940	368+47	83.4 : 83.4%	39	0	0	6.4	67.1	11.6
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	959	2080	2080	46.1%	-	-	-	0.5	1.9	9.7
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	644	1940	1940	33.2%	-	-	-	0.2	1.4	0.2
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	35	-	666	1940:1940	324+572	74.3 : 74.3%	-	-	-	3.6	19.5	9.9
3/3	Carmen Rd S Ahead	U	C2:6		1	35	-	325	1940	613	53.0%	-	-	-	3.5	38.3	9.0
3/4	Carmen Rd S Right	O	C2:8		1	10	-	140	1940	187	74.8%	0	138	2	3.4	86.2	5.7
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	878	2080	2080	42.2%	-	-	-	0.4	1.7	10.2

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4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	339	1940	1940	17.5%	-	-	-	0.1	1.1	0.1	
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	51:10	0	214	2080:2080	213+154	58.3 : 58.3%	-	-	-	2.5	42.5	3.4
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	51	-	522	1940	885	59.0%	-	-	-	4.1	28.0	12.9
5/4	Mains S Rd Westbound Right	O	C2:5		1	24	-	383	1940	425	90.0%	0	376	7	8.4	79.2	15.5
6/1	Carmen Rd S Departure	U	-		-	-	-	334	1940	1940	17.2%	-	-	-	0.1	1.1	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	361	1940	1940	18.6%	-	-	-	0.1	1.1	0.1
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	35	29	538	2080	657	81.9%	-	-	-	7.6	50.6	17.9
7/2	Shands Rd N Ahead	U	C2:7		1	35	-	500	1940	613	81.6%	-	-	-	7.1	51.3	16.7
7/3	Shands Rd N Right	O	C2:9		1	10	-	156	1940	187	83.3%	0	153	3	4.4	101.2	7.0
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	263	2080	2080	12.6%	-	-	-	0.1	1.0	0.1
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	523	1940	1940	27.0%	-	-	-	0.2	1.3	0.2
Ped Link: P1	Shands Rd	-	C2:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Mains S Rd	-	C2:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>58.3%</b>	<b>420</b>	<b>0</b>	<b>0</b>	<b>5.9</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	144	1940	340	42.3%	144	0	0	1.2	29.0	3.4
2/1	Chalmers St Departure	U	-		-	-	-	391	1940	1940	20.2%	-	-	-	0.1	1.2	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	918	2080	2080	44.1%	-	-	-	0.4	1.5	0.4

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3/2	Carmen Rd N Ahead	U	-	-	-	-	685	1940	1940	35.3%	-	-	-	0.3	1.7	12.7	
4/1	Carmen Rd Departure	U	-	-	-	-	902	2080	2080	43.4%	-	-	-	0.4	1.5	0.4	
4/2	Carmen Rd Departure	U	-	-	-	-	730	1940	1940	37.6%	-	-	-	0.3	1.6	9.0	
5/1	Carmen Rd South Ahead	U	-	-	-	-	1131	1940	1940	58.3%	-	-	-	0.7	2.2	0.7	
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	276	1940:1940	0+587	0.0 : 47.1%	276	0	0	2.1	27.2	6.5	
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	666	1940	1940	34.3%	-	-	-	0.3	1.4	0.3	
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	465	1940	1940	24.0%	-	-	-	0.2	1.2	0.2	
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>23.5%</b>	<b>119</b>	<b>0</b>	<b>0</b>	<b>0.7</b>	-	-	
1/1	Mall Entrance	U	-	-	-	-	68	1940	1940	3.5%	-	-	-	0.0	1.0	0.0	
2/1	Mall Exit Left	O	-	-	-	-	119	1940	646	18.4%	119	0	0	0.1	3.4	0.1	
3/1	Mall Entry Left Ahead	U	-	-	-	-	458	2080	2080	22.0%	-	-	-	0.1	1.1	0.1	
3/2	Mall Entry Ahead	U	-	-	-	-	348	1940	1940	17.9%	-	-	-	0.1	1.1	0.1	
4/1	Mall Exit Ahead	U	-	-	-	-	489	2080	2080	23.5%	-	-	-	0.2	1.1	0.2	
4/2	Mall Exit Ahead	U	-	-	-	-	368	1940	1940	19.0%	-	-	-	0.1	1.1	0.1	
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		-9.9		Total Delay for Signalled Lanes (pcuHr):		40.26		Cycle Time (s):		114					
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		-0.0		Total Delay for Signalled Lanes (pcuHr):		56.96		Cycle Time (s):		114					
		PRC Over All Lanes (%):		-9.9		Total Delay Over All Lanes(pcuHr):		107.71									

## Appendix A

**Network Summary**

<b>Controller</b>	<b>Stream</b>	<b>PRC (%)</b>	<b>Total Delay for stream (pcuHr)</b>
C1 - Mains S Rd / Chalmers St	1	-9.94	40.26
C2 - Mains S Rd / Shands Rd	1	-0.03	56.96
<b>Total Network Delay:</b> 107.71 pcuHr			
<b>Worst PRC:</b> -9.94 % (On Lane J1:6/2 in Stream 1)			
<b>Level Of Service:</b> D			

Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead Arm J1:8 Left	Inf Inf	78.7 % 21.3 %	2080	2080
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	0.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right Arm J1:2 Left	Inf Inf	100.0 % 20.3 %	1940	1940
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:3 Ahead	Inf	79.7 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

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Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead Arm J2:8 Left	Inf Inf	100.0 % 0.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

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J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	12.5 % 87.5 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	0.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	14.8 % 85.2 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940





Appendix A  
Network Results

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	<b>99.3%</b>	<b>1891</b>	<b>777</b>	<b>79</b>	<b>104.8</b>	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	<b>99.3%</b>	<b>1225</b>	<b>16</b>	<b>67</b>	<b>38.7</b>	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	52	0	542	2080:1940	78+862	57.7 : 57.7%	-	-	-	3.9	26.2	12.2
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	52	-	406	1940:1940	777+212	41.0 : 41.0%	87	0	0	2.6	23.3	6.8
2/1	Mains S Rd Departure	U	-		-	-	-	525	2080	2080	25.2%	-	-	-	0.2	1.2	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	242	1940	1940	12.5%	-	-	-	0.1	1.1	0.1
3/1	Chamber St Departure	U	-		-	-	-	1163	2080	2080	55.9%	-	-	-	0.7	2.2	8.8
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	50	-	550	1940:1940	230+473	78.2 : 78.2%	354	16	0	3.4	22.1	9.5
4/3	Chalmers St South Right	O	C1:7		1	50	-	387	1940	390	<b>99.3%</b>	345	0	42	13.6	126.3	21.4
5/1	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	464	2080	2080	22.3%	-	-	-	0.1	1.1	0.1
5/2	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	342	1940	1940	17.6%	-	-	-	0.1	1.1	0.1
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	52	0	394	2080	967	40.7%	-	-	-	0.9	7.8	2.8
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	52	-	392	1940:1940	0+412	<b>0.0 : 95.1%</b>	367	0	25	8.3	76.0	18.4

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7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	50	0	416	1940:1940	753+158	45.7 : 45.7%	72	0	0	2.9	25.0	8.2
8/1	Goulding Ave Departure	U	C1:5		1	50	-	351	1940	868	40.4%	-	-	-	2.0	20.5	8.6
Ped Link: P1	Mains S Rd	-	C1:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Chalmers St Crossing	-	C1:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P4	Goulding Ave	-	C1:9		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>90.0%</b>	<b>127</b>	<b>761</b>	<b>12</b>	<b>59.5</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	182	2080	444	41.0%	88	94	0	0.6	12.1	3.3
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	21	-	329	2080	401	82.0%	-	-	-	6.0	66.1	12.0
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	21	-	346	1940:1940	368+47	83.4 : 83.4%	39	0	0	6.5	67.2	11.6
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	1003	2080	2080	48.2%	-	-	-	0.5	2.0	9.7
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	600	1940	1940	30.9%	-	-	-	0.2	1.3	0.2
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	35	-	665	1940:1940	324+573	74.1 : 74.1%	-	-	-	3.6	19.3	9.9
3/3	Carmen Rd S Ahead	U	C2:6		1	35	-	326	1940	613	53.2%	-	-	-	3.5	38.3	9.0
3/4	Carmen Rd S Right	O	C2:8		1	10	-	140	1940	187	74.8%	0	138	2	3.4	86.2	5.7
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	879	2080	2080	42.3%	-	-	-	0.4	1.7	10.2

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4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	338	1940	1940	17.4%	-	-	-	0.1	1.1	0.1	
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	51:10	0	196	2080:2080	186+158	56.9 : 56.9%	-	-	-	2.4	44.0	3.3
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	51	-	540	1940	885	61.0%	-	-	-	4.3	28.6	13.5
5/4	Mains S Rd Westbound Right	O	C2:5		1	24	-	383	1940	425	90.0%	0	376	7	8.4	79.2	15.5
6/1	Carmen Rd S Departure	U	-		-	-	-	328	1940	1940	16.9%	-	-	-	0.1	1.1	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	367	1940	1940	18.9%	-	-	-	0.1	1.1	0.1
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	35	0	538	2080	657	81.9%	-	-	-	7.6	50.6	17.9
7/2	Shands Rd N Ahead	U	C2:7		1	35	-	500	1940	613	81.6%	-	-	-	7.1	51.3	16.7
7/3	Shands Rd N Right	O	C2:9		1	10	-	156	1940	187	83.3%	0	153	3	4.4	101.2	7.0
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	245	2080	2080	11.8%	-	-	-	0.1	1.0	0.1
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	541	1940	1940	27.9%	-	-	-	0.2	1.3	0.2
Ped Link: P1	Shands Rd	-	C2:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Mains S Rd	-	C2:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>58.3%</b>	<b>420</b>	<b>0</b>	<b>0</b>	<b>6.0</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	144	1940	338	42.6%	144	0	0	1.2	29.2	3.4
2/1	Chalmers St Departure	U	-		-	-	-	391	1940	1940	20.2%	-	-	-	0.1	1.2	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	918	2080	2080	44.1%	-	-	-	0.4	1.5	0.4

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3/2	Carmen Rd N Ahead	U	-	-	-	-	685	1940	1940	35.3%	-	-	-	0.4	1.9	13.8
4/1	Carmen Rd Departure	U	-	-	-	-	907	2080	2080	43.6%	-	-	-	0.4	1.5	0.4
4/2	Carmen Rd Departure	U	-	-	-	-	725	1940	1940	37.4%	-	-	-	0.3	1.6	9.6
5/1	Carmen Rd South Ahead	U	-	-	-	-	1131	1940	1940	58.3%	-	-	-	0.7	2.2	0.7
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	276	1940:1940	0+586	0.0 : 47.1%	276	0	0	2.1	27.3	6.5
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	665	1940	1940	34.3%	-	-	-	0.3	1.4	0.3
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	466	1940	1940	24.0%	-	-	-	0.2	1.2	0.2
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>23.8%</b>	<b>119</b>	<b>0</b>	<b>0</b>	<b>0.7</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	68	1940	1940	3.5%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	119	1940	646	18.4%	119	0	0	0.1	3.4	0.1
3/1	Mall Entry Left Ahead	U	-	-	-	-	482	2080	2080	23.2%	-	-	-	0.2	1.1	0.2
3/2	Mall Entry Ahead	U	-	-	-	-	324	1940	1940	16.7%	-	-	-	0.1	1.1	0.1
4/1	Mall Exit Ahead	U	-	-	-	-	494	2080	2080	23.8%	-	-	-	0.2	1.1	0.2
4/2	Mall Exit Ahead	U	-	-	-	-	363	1940	1940	18.7%	-	-	-	0.1	1.1	0.1
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		-10.4		Total Delay for Signalled Lanes (pcuHr):		37.53		Cycle Time (s):		114				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		-0.0		Total Delay for Signalled Lanes (pcuHr):		57.09		Cycle Time (s):		114				
		PRC Over All Lanes (%):		-10.4		Total Delay Over All Lanes(pcuHr):		104.81								

## Appendix A

**Network Summary**

<b>Controller</b>	<b>Stream</b>	<b>PRC (%)</b>	<b>Total Delay for stream (pcuHr)</b>
C1 - Mains S Rd / Chalmers St	1	-10.37	37.53
C2 - Mains S Rd / Shands Rd	1	-0.03	57.09
<b>Total Network Delay:</b> 104.81 pcuHr			
<b>Worst PRC:</b> -10.37 % (On Lane J1:4/3 in Stream 1)			
<b>Level Of Service:</b> D			

Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead Arm J1:8 Left	Inf Inf	78.7 % 21.3 %	2080	2080
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	0.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:2 Left Arm J1:3 Ahead	Inf Inf	20.3 % 79.7 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

Appendix A

Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead Arm J2:8 Left	Inf Inf	100.0 % 0.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

Appendix A

J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	12.5 % 87.5 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	0.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	14.1 % 85.9 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940



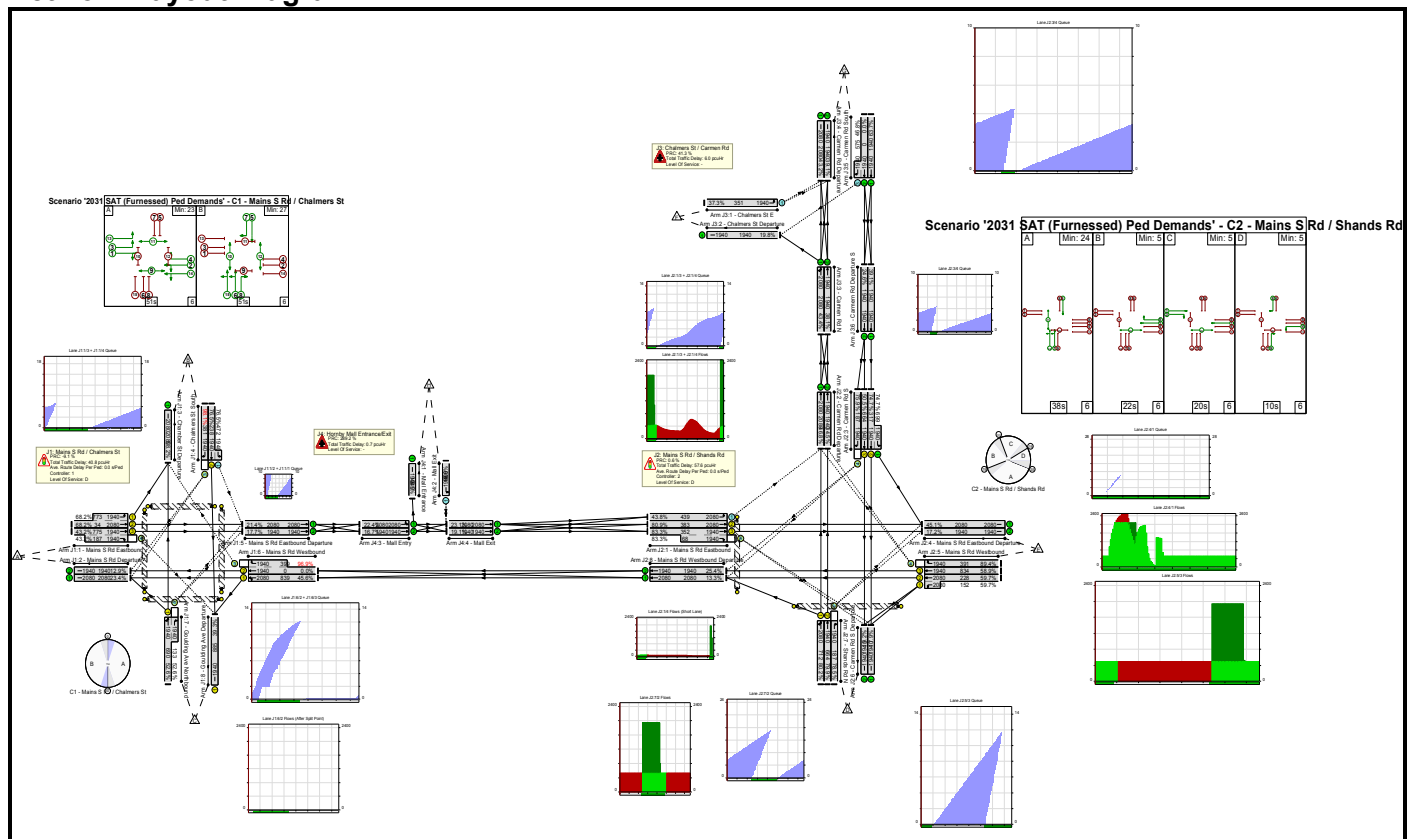
Appendix A

Travel Time Matrix, Delay Per PCU

Delay Per PCU :

	A	B	C	D	E	F	G	H
A	0.0	28.7	66.8	0.0	91.9	0.0	45.4	25.8
B	127.4	0.0	40.2	88.6	91.9	0.0	0.0	0.0
C	26.0	26.8	0.0	0.0	84.9	0.0	42.1	28.8
D	0.0	0.0	0.0	0.0	102.6	55.4	56.0	0.0
E	36.1	108.3	67.9	61.8	0.0	83.5	83.9	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	30.7	0.0
G	104.4	0.0	118.4	43.0	13.9	28.5	0.0	0.0
H	0.0	0.0	0.0	68.4	74.0	0.0	21.5	0.0

Scenario 17: '2031 SAT (Furnished) Ped Demands' (FG9: '2031 SAT Base', Plan 1: 'Plan 1 - Ped Demands')  
Network Layout Diagram



Appendix A  
Network Results

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	<b>98.1%</b>	<b>1759</b>	<b>851</b>	<b>81</b>	<b>105.1</b>	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	<b>98.1%</b>	<b>1071</b>	<b>131</b>	<b>70</b>	<b>40.8</b>	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	51:45	45	550	2080:1940	34+773	68.2 : 68.2%	-	-	-	5.3	34.5	14.9
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	51	-	416	1940:1940	775+187	43.2 : 43.2%	34	47	0	2.7	23.3	7.3
2/1	Mains S Rd Departure	U	-		-	-	-	487	2080	2080	23.4%	-	-	-	0.2	1.1	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	251	1940	1940	12.9%	-	-	-	0.1	1.1	0.1
3/1	Chamber St Departure	U	-		-	-	-	1210	2080	2080	58.2%	-	-	-	1.3	4.0	23.3
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	51	-	543	1940:1940	238+472	76.5 : 76.5%	345	16	0	3.2	20.9	9.0
4/3	Chalmers St South Right	O	C1:7		1	51	-	374	1940	381	<b>98.1%</b>	268	68	38	12.0	115.1	19.7
5/1	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	446	2080	2080	21.4%	-	-	-	0.1	1.1	0.1
5/2	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	343	1940	1940	17.7%	-	-	-	0.1	1.1	0.1
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	45	45	383	2080	839	45.6%	-	-	-	1.2	10.9	4.2
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	45	-	386	1940:1940	0+399	<b>0.0 : 96.9%</b>	354	0	32	9.3	86.4	19.3

## Appendix A

7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	45:51	45	433	1940:1940	690+133	52.6 : 52.6%	70	0	0	3.5	29.3	9.7
8/1	Goulding Ave Departure	U	C1:5		1	51	-	348	1940	885	39.3%	-	-	-	2.0	20.3	8.4
Ped Link: P1	Mains S Rd	-	C1:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Chalmers St Crossing	-	C1:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Goulding Ave	-	C1:9		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>89.4%</b>	<b>156</b>	<b>720</b>	<b>11</b>	<b>57.6</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	192	2080	439	43.8%	99	93	0	0.7	13.6	4.0
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	20	-	310	2080	383	80.9%	-	-	-	5.7	66.0	11.3
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	20	-	350	1940:1940	352+68	83.3 : 83.3%	57	0	0	6.5	66.6	11.1
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	974	2080	2080	46.8%	-	-	-	0.5	1.9	9.3
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	669	1940	1940	34.5%	-	-	-	0.3	1.4	0.3
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	38	-	759	1940:1940	317+699	74.7 : 74.7%	-	-	-	3.4	16.1	9.4
3/3	Carmen Rd S Ahead	U	C2:6		1	38	-	335	1940	664	50.5%	-	-	-	3.3	35.3	8.9
3/4	Carmen Rd S Right	O	C2:8		1	10	-	142	1940	187	75.9%	0	140	2	3.5	87.6	5.9
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	938	2080	2080	45.1%	-	-	-	0.5	1.9	10.9

Appendix A

4/2	Mains S Rd Eastbound Departure	U	-		-	-	-	334	1940	1940	17.2%	-	-	-	0.1	1.1	0.1
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	48:10	0	227	2080:2080	228+152	59.7 : 59.7%	-	-	-	2.7	43.1	3.4
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	48	-	491	1940	834	58.9%	-	-	-	4.1	30.0	12.6
5/4	Mains S Rd Westbound Right	O	C2:5		1	22	-	350	1940	391	89.4%	0	344	6	7.9	81.3	14.4
6/1	Carmen Rd S Departure	U	-		-	-	-	347	1940	1940	17.9%	-	-	-	0.1	1.1	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	373	1940	1940	19.2%	-	-	-	0.1	1.1	0.1
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	38	32	571	2080	712	80.2%	-	-	-	7.4	46.5	18.3
7/2	Shands Rd N Ahead	U	C2:7		1	38	-	530	1940	664	79.9%	-	-	-	6.9	47.0	17.1
7/3	Shands Rd N Right	O	C2:9		1	10	-	147	1940	187	78.5%	0	144	3	3.7	91.7	6.2
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	277	2080	2080	13.3%	-	-	-	0.1	1.0	0.1
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	492	1940	1940	25.4%	-	-	-	0.2	1.2	0.2
Ped Link: P1	Shands Rd	-	C2:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Mains S Rd	-	C2:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>63.7%</b>	<b>400</b>	<b>0</b>	<b>0</b>	<b>6.0</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	131	1940	351	37.3%	131	0	0	1.0	28.2	3.0
2/1	Chalmers St Departure	U	-		-	-	-	385	1940	1940	19.8%	-	-	-	0.1	1.2	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	903	2080	2080	43.4%	-	-	-	0.4	1.5	0.4

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3/2	Carmen Rd N Ahead	U	-	-	-	-	740	1940	1940	38.1%	-	-	-	0.3	1.6	10.7
4/1	Carmen Rd Departure	U	-	-	-	-	899	2080	2080	43.2%	-	-	-	0.4	1.5	0.4
4/2	Carmen Rd Departure	U	-	-	-	-	759	1940	1940	39.1%	-	-	-	0.3	1.5	4.1
5/1	Carmen Rd South Ahead	U	-	-	-	-	1236	1940	1940	63.7%	-	-	-	0.9	2.6	0.9
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	269	1940:1940	0+575	0.0 : 46.8%	269	0	0	2.1	27.8	6.4
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	759	1940	1940	39.1%	-	-	-	0.3	1.5	0.3
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	477	1940	1940	24.6%	-	-	-	0.2	1.2	0.2
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>23.1%</b>	<b>131</b>	<b>0</b>	<b>0</b>	<b>0.7</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	68	1940	1940	3.5%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	131	1940	669	19.6%	131	0	0	0.1	3.3	0.1
3/1	Mall Entry Left Ahead	U	-	-	-	-	465	2080	2080	22.4%	-	-	-	0.1	1.1	0.1
3/2	Mall Entry Ahead	U	-	-	-	-	324	1940	1940	16.7%	-	-	-	0.1	1.1	0.1
4/1	Mall Exit Ahead	U	-	-	-	-	481	2080	2080	23.1%	-	-	-	0.2	1.1	0.2
4/2	Mall Exit Ahead	U	-	-	-	-	371	1940	1940	19.1%	-	-	-	0.1	1.1	0.1
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		-9.1		Total Delay for Signalled Lanes (pcuHr):		38.99		Cycle Time (s):		114				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		0.6		Total Delay for Signalled Lanes (pcuHr):		55.04		Cycle Time (s):		114				
		PRC Over All Lanes (%):		-9.1		Total Delay Over All Lanes(pcuHr):		105.06								

## Appendix A

**Network Summary**

<b>Controller</b>	<b>Stream</b>	<b>PRC (%)</b>	<b>Total Delay for stream (pcuHr)</b>
C1 - Mains S Rd / Chalmers St	1	-9.05	38.99
C2 - Mains S Rd / Shands Rd	1	0.65	55.04
<b>Total Network Delay:</b> 105.06 pcuHr			
<b>Worst PRC:</b> -9.05 % (On Lane J1:4/3 in Stream 1)			
<b>Level Of Service:</b> D			

Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead Arm J1:8 Left	Inf Inf	77.8 % 22.2 %	2080	2080
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	0.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right Arm J1:2 Left	Inf Inf	100.0 % 18.2 %	1940	1940
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:3 Ahead	Inf	81.8 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

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Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead Arm J2:8 Left	Inf Inf	100.0 % 0.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080



Appendix A

J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	12.8 % 87.2 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	0.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	14.6 % 85.4 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

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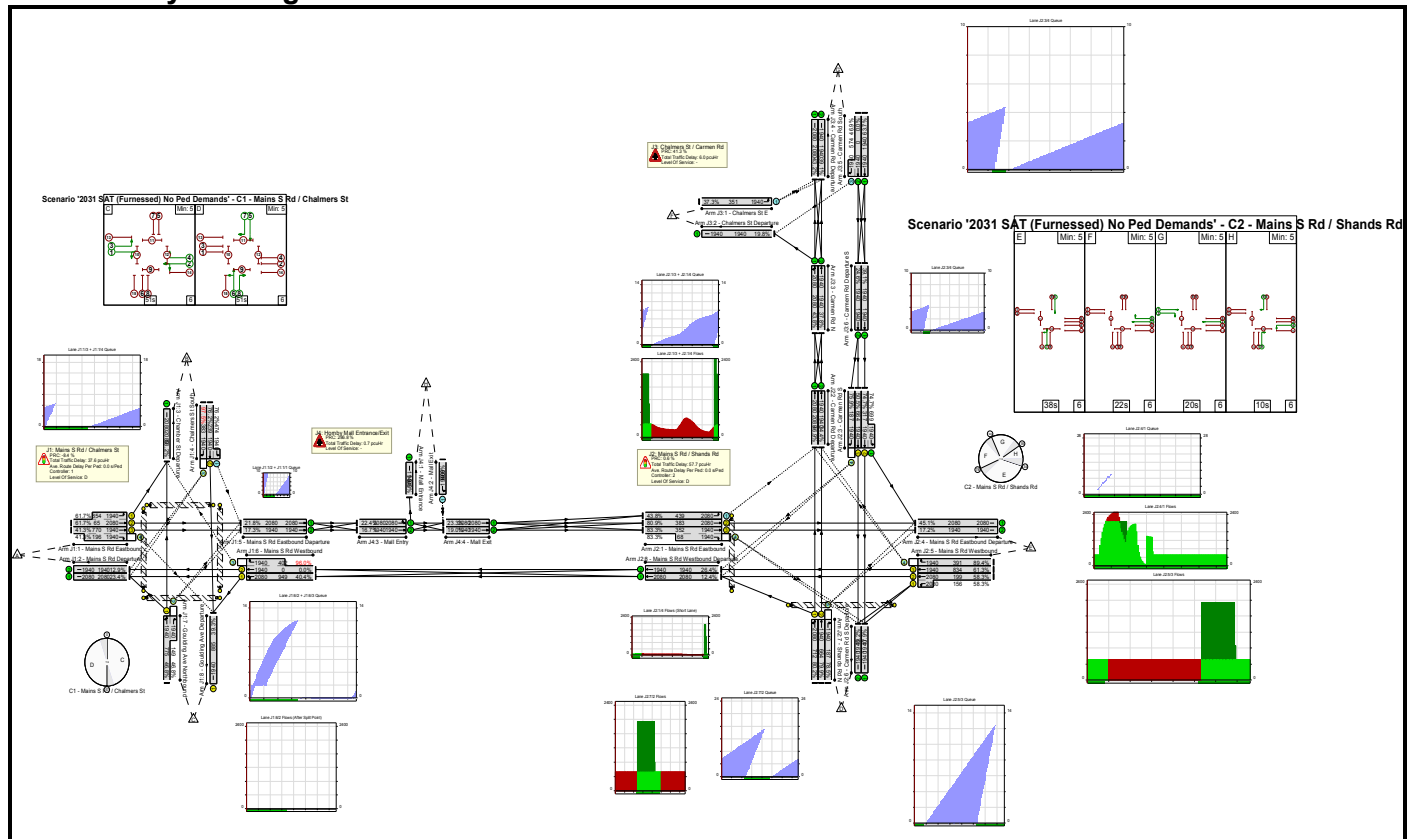
Travel Time Matrix, Delay Per PCU

Delay Per PCU :

	A	B	C	D	E	F	G	H
A	0.0	39.1	66.4	0.0	93.3	0.0	48.4	26.9
B	116.2	0.0	38.4	86.6	89.8	0.0	0.0	0.0
C	30.7	31.7	0.0	0.0	90.1	0.0	44.5	30.8
D	0.0	0.0	0.0	0.0	93.1	51.1	51.6	0.0
E	39.7	123.1	67.9	61.5	0.0	85.6	85.9	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	29.7	0.0
G	110.7	0.0	124.1	40.3	13.2	29.0	0.0	0.0
H	0.0	0.0	0.0	69.2	74.2	0.0	22.6	0.0

Scenario 18: '2031 SAT (Furnished) No Ped Demands' (FG9: '2031 SAT Base', Plan 2: 'Plan 2 - No Ped Demands')

Network Layout Diagram



## Appendix A

## Network Results

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	97.5%	1879	737	75	102.0	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	97.5%	1192	16	64	37.6	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	51	0	567	2080:1940	65+854	61.7 : 61.7%	-	-	-	4.4	28.0	13.6
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	51	-	399	1940:1940	770+196	41.3 : 41.3%	81	0	0	2.6	23.7	6.9
2/1	Mains S Rd Departure	U	-		-	-	-	487	2080	2080	23.4%	-	-	-	0.2	1.1	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	251	1940	1940	12.9%	-	-	-	0.1	1.1	0.1
3/1	Chamber St Departure	U	-		-	-	-	1210	2080	2080	58.2%	-	-	-	0.8	2.5	12.3
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	51	-	543	1940:1940	239+474	76.2 : 76.2%	345	16	0	3.1	20.7	8.8
4/3	Chalmers St South Right	O	C1:7		1	51	-	374	1940	383	97.5%	339	0	35	11.8	113.4	19.2
5/1	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	454	2080	2080	21.8%	-	-	-	0.1	1.1	0.1
5/2	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	335	1940	1940	17.3%	-	-	-	0.1	1.1	0.1
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	51	0	383	2080	949	40.4%	-	-	-	0.8	7.9	2.3
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	51	-	386	1940:1940	0+402	0.0 : 96.0%	357	0	29	8.7	80.9	18.8

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7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	51	0	433	1940:1940	775+149	46.8 : 46.8%	70	0	0	3.0	24.5	8.6
8/1	Goulding Ave Departure	U	C1:5		1	51	-	348	1940	885	39.3%	-	-	-	1.9	19.6	8.5
Ped Link: P1	Mains S Rd	-	C1:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Chalmers St Crossing	-	C1:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P4	Goulding Ave	-	C1:9		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>89.4%</b>	<b>155</b>	<b>721</b>	<b>11</b>	<b>57.7</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	192	2080	439	43.8%	98	94	0	0.7	13.5	3.9
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	20	-	310	2080	383	80.9%	-	-	-	5.7	66.0	11.3
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	20	-	350	1940:1940	352+68	83.3 : 83.3%	57	0	0	6.5	66.6	11.1
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	976	2080	2080	46.9%	-	-	-	0.5	1.9	9.3
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	667	1940	1940	34.4%	-	-	-	0.3	1.4	0.3
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	38	-	759	1940:1940	317+699	74.7 : 74.7%	-	-	-	3.4	16.1	9.4
3/3	Carmen Rd S Ahead	U	C2:6		1	38	-	335	1940	664	50.5%	-	-	-	3.3	35.3	8.9
3/4	Carmen Rd S Right	O	C2:8		1	10	-	142	1940	187	75.9%	0	140	2	3.5	87.6	5.9
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	938	2080	2080	45.1%	-	-	-	0.5	1.9	10.9

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4/2	Mains S Rd Eastbound Departure	U	-		-	-	-	334	1940	1940	17.2%	-	-	-	0.1	1.1	0.1
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	48:10	0	207	2080:2080	199+156	58.3 : 58.3%	-	-	-	2.6	44.4	3.4
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	48	-	511	1940	834	61.3%	-	-	-	4.4	30.7	13.3
5/4	Mains S Rd Westbound Right	O	C2:5		1	22	-	350	1940	391	89.4%	0	344	6	7.9	81.3	14.4
6/1	Carmen Rd S Departure	U	-		-	-	-	347	1940	1940	17.9%	-	-	-	0.1	1.1	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	373	1940	1940	19.2%	-	-	-	0.1	1.1	0.1
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	38	0	571	2080	712	80.2%	-	-	-	7.4	46.5	18.3
7/2	Shands Rd N Ahead	U	C2:7		1	38	-	530	1940	664	79.9%	-	-	-	6.9	47.0	17.1
7/3	Shands Rd N Right	O	C2:9		1	10	-	147	1940	187	78.5%	0	144	3	3.7	91.7	6.2
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	257	2080	2080	12.4%	-	-	-	0.1	1.0	0.1
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	512	1940	1940	26.4%	-	-	-	0.2	1.3	0.2
Ped Link: P1	Shands Rd	-	C2:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Mains S Rd	-	C2:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>63.7%</b>	<b>400</b>	<b>0</b>	<b>0</b>	<b>6.0</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	131	1940	351	37.3%	131	0	0	1.0	28.2	3.0
2/1	Chalmers St Departure	U	-		-	-	-	385	1940	1940	19.8%	-	-	-	0.1	1.2	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	910	2080	2080	43.8%	-	-	-	0.4	1.5	0.4

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3/2	Carmen Rd N Ahead	U	-	-	-	-	733	1940	1940	37.8%	-	-	-	0.3	1.6	10.6
4/1	Carmen Rd Departure	U	-	-	-	-	899	2080	2080	43.2%	-	-	-	0.4	1.5	0.4
4/2	Carmen Rd Departure	U	-	-	-	-	759	1940	1940	39.1%	-	-	-	0.3	1.5	6.3
5/1	Carmen Rd South Ahead	U	-	-	-	-	1236	1940	1940	63.7%	-	-	-	0.9	2.6	0.9
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	269	1940:1940	0+574	0.0 : 46.9%	269	0	0	2.1	28.0	6.4
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	759	1940	1940	39.1%	-	-	-	0.3	1.5	0.3
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	477	1940	1940	24.6%	-	-	-	0.2	1.2	0.2
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>23.3%</b>	<b>131</b>	<b>0</b>	<b>0</b>	<b>0.7</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	68	1940	1940	3.5%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	131	1940	669	19.6%	131	0	0	0.1	3.3	0.1
3/1	Mall Entry Left Ahead	U	-	-	-	-	465	2080	2080	22.4%	-	-	-	0.1	1.1	0.1
3/2	Mall Entry Ahead	U	-	-	-	-	324	1940	1940	16.7%	-	-	-	0.1	1.1	0.1
4/1	Mall Exit Ahead	U	-	-	-	-	484	2080	2080	23.3%	-	-	-	0.2	1.1	0.2
4/2	Mall Exit Ahead	U	-	-	-	-	368	1940	1940	19.0%	-	-	-	0.1	1.1	0.1
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		-8.4		Total Delay for Signalled Lanes (pcuHr):		36.31		Cycle Time (s):		114				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		0.6		Total Delay for Signalled Lanes (pcuHr):		55.14		Cycle Time (s):		114				
		PRC Over All Lanes (%):		-8.4		Total Delay Over All Lanes(pcuHr):		101.99								

## Appendix A

**Network Summary**

<b>Controller</b>	<b>Stream</b>	<b>PRC (%)</b>	<b>Total Delay for stream (pcuHr)</b>
C1 - Mains S Rd / Chalmers St	1	-8.37	36.31
C2 - Mains S Rd / Shands Rd	1	0.65	55.14
<b>Total Network Delay:</b> 101.99 pcuHr			
<b>Worst PRC:</b> -8.37 % (On Lane J1:4/3 in Stream 1)			
<b>Level Of Service:</b> D			

Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead Arm J1:8 Left	Inf Inf	77.8 % 22.2 %	2080	2080
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	0.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:2 Left Arm J1:3 Ahead	Inf Inf	18.2 % 81.8 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940



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Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead Arm J2:8 Left	Inf Inf	100.0 % 0.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

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J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	12.7 % 87.3 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	0.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	14.6 % 85.4 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

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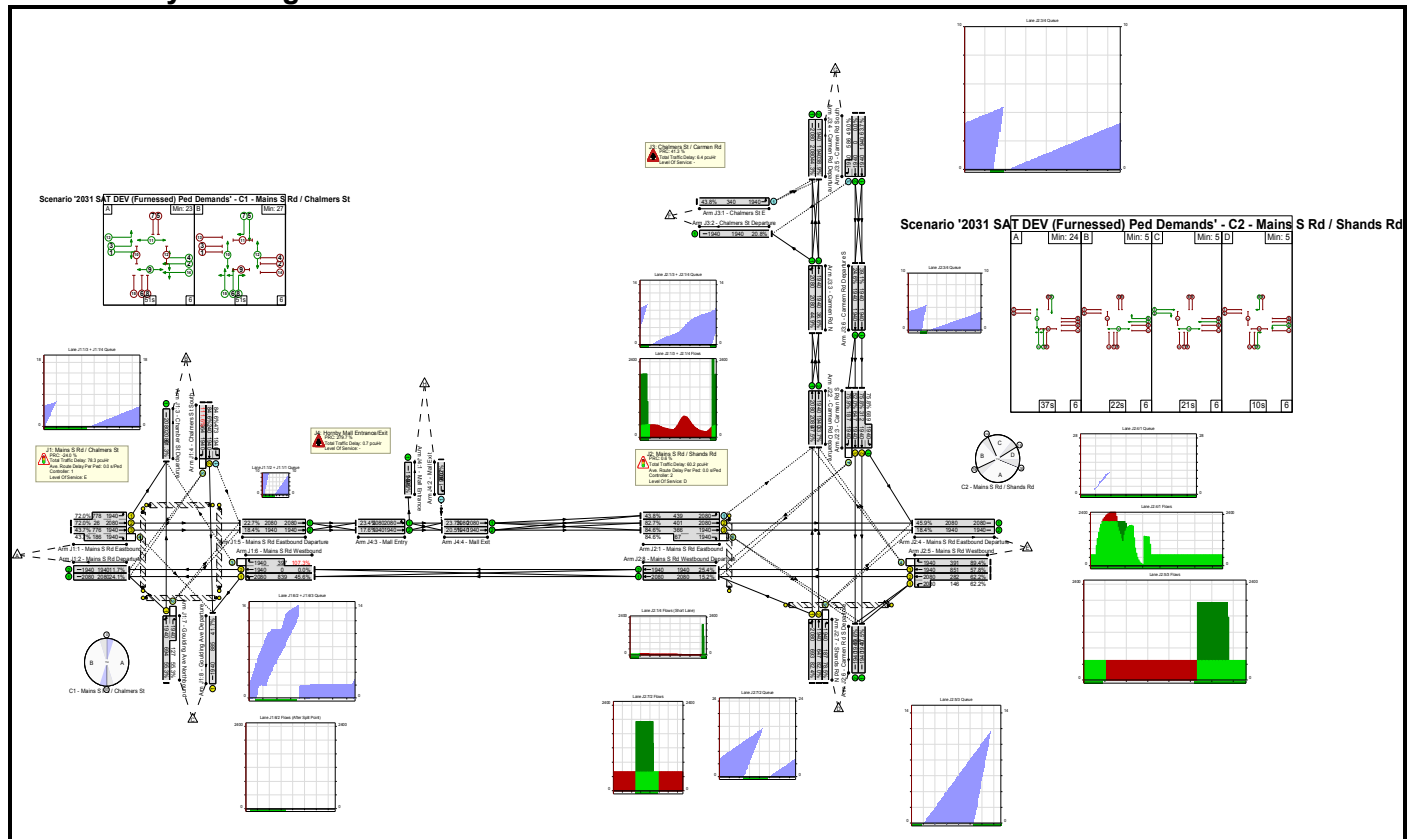
Travel Time Matrix, Delay Per PCU

Delay Per PCU :

	A	B	C	D	E	F	G	H
A	0.0	30.8	66.4	0.0	92.3	0.0	47.4	26.5
B	114.5	0.0	38.2	87.0	90.1	0.0	0.0	0.0
C	25.5	26.5	0.0	0.0	85.3	0.0	42.2	28.3
D	0.0	0.0	0.0	0.0	93.1	51.1	51.6	0.0
E	38.0	115.7	67.9	61.8	0.0	85.6	85.9	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	29.7	0.0
G	106.5	0.0	120.1	40.3	13.2	29.1	0.0	0.0
H	0.0	0.0	0.0	69.2	74.2	0.0	22.5	0.0

Scenario 19: '2031 SAT DEV (Furnished) Ped Demands' (FG10: '2031 SAT Base + Dev', Plan 1: 'Plan 1 - Ped Demands')

Network Layout Diagram



## Appendix A

## Network Results

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	111.6%	1811	855	101	145.6	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	111.6%	1089	133	90	78.3	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	51:45	45	579	2080:1940	26+778	72.0 : 72.0%	-	-	-	5.8	36.2	16.3
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	51	-	420	1940:1940	776+186	43.7 : 43.7%	34	47	0	2.7	23.3	7.4
2/1	Mains S Rd Departure	U	-		-	-	-	517	2080	2080	24.1%	-	-	-	0.2	1.1	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	253	1940	1940	11.7%	-	-	-	0.1	1.1	0.1
3/1	Chamber St Departure	U	-		-	-	-	1304	2080	2080	61.3%	-	-	-	1.6	4.6	25.9
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	51	-	603	1940:1940	240+473	84.6 : 84.6%	382	18	0	4.7	28.3	12.9
4/3	Chalmers St South Right	O	C1:7		1	51	-	406	1940	364	111.6%	251	68	45	32.0	283.5	40.3
5/1	Mains S Rd Eastbound Dapature Ahead	U	-		-	-	-	472	2080	2080	22.7%	-	-	-	0.1	1.1	0.1
5/2	Mains S Rd Eastbound Dapature Ahead	U	-		-	-	-	356	1940	1940	18.4%	-	-	-	0.1	1.1	0.1
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	45	45	383	2080	839	45.6%	-	-	-	1.2	11.2	4.7
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	45	-	426	1940:1940	0+397	0.0 : 107.3%	352	0	45	24.0	202.4	34.3

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7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	45:51	45	454	1940:1940	694+127	55.3 : 55.3%	70	0	0	3.8	30.0	10.4
8/1	Goulding Ave Departure	U	C1:5		1	51	-	369	1940	885	41.7%	-	-	-	2.0	19.7	8.5
Ped Link: P1	Mains S Rd	-	C1:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Chalmers St Crossing	-	C1:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Goulding Ave	-	C1:9		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>89.4%</b>	<b>155</b>	<b>722</b>	<b>11</b>	<b>60.2</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	192	2080	439	43.8%	98	94	0	0.7	14.0	4.1
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	21	-	332	2080	401	82.7%	-	-	-	6.4	69.6	12.2
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	21	-	367	1940:1940	366+67	84.6 : 84.6%	57	0	0	7.1	69.3	11.9
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	989	2080	2080	47.5%	-	-	-	0.5	1.9	9.8
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	654	1940	1940	33.7%	-	-	-	0.3	1.4	0.3
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	37	-	758	1940:1940	312+689	75.8 : 75.8%	-	-	-	3.5	16.7	9.7
3/3	Carmen Rd S Ahead	U	C2:6		1	37	-	336	1940	647	52.0%	-	-	-	3.4	36.4	9.0
3/4	Carmen Rd S Right	O	C2:8		1	10	-	142	1940	187	75.9%	0	140	2	3.5	87.6	5.9
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	955	2080	2080	45.9%	-	-	-	0.5	2.0	12.1

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4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	-	356	1940	1940	18.4%	-	-	-	0.1	1.1	0.1
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	49:10	0	266	2080:2080	282+146	62.2 : 62.2%	-	-	-	3.0	40.6	4.2
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	49	-	492	1940	851	57.8%	-	-	-	4.0	29.1	12.3
5/4	Mains S Rd Westbound Right	O	C2:5		1	22	-	350	1940	391	89.4%	0	344	6	7.9	81.3	14.4
6/1	Carmen Rd S Departure	U	-		-	-	-	340	1940	1940	17.5%	-	-	-	0.1	1.1	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	380	1940	1940	19.6%	-	-	-	0.1	1.2	0.1
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	37	31	571	2080	693	82.4%	-	-	-	7.8	49.1	18.7
7/2	Shands Rd N Ahead	U	C2:7		1	37	-	530	1940	647	82.0%	-	-	-	7.3	49.7	17.5
7/3	Shands Rd N Right	O	C2:9		1	10	-	147	1940	187	78.5%	0	144	3	3.7	91.7	6.2
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	316	2080	2080	15.2%	-	-	-	0.1	1.0	0.1
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	493	1940	1940	25.4%	-	-	-	0.2	1.2	0.2
Ped Link: P1	Shands Rd	-	C2:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Mains S Rd	-	C2:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>63.7%</b>	<b>436</b>	<b>0</b>	<b>0</b>	<b>6.4</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	149	1940	340	43.8%	149	0	0	1.2	29.5	3.5
2/1	Chalmers St Departure	U	-		-	-	-	403	1940	1940	20.8%	-	-	-	0.1	1.2	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	933	2080	2080	44.9%	-	-	-	0.4	1.6	0.4

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3/2	Carmen Rd N Ahead	U	-	-	-	-	710	1940	1940	36.6%	-	-	-	0.3	1.7	12.7
4/1	Carmen Rd Departure	U	-	-	-	-	922	2080	2080	44.3%	-	-	-	0.4	1.6	0.4
4/2	Carmen Rd Departure	U	-	-	-	-	754	1940	1940	38.9%	-	-	-	0.3	1.6	10.1
5/1	Carmen Rd South Ahead	U	-	-	-	-	1236	1940	1940	63.7%	-	-	-	0.9	2.6	0.9
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	287	1940:1940	0+586	0.0 : 49.0%	287	0	0	2.2	27.7	6.9
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	758	1940	1940	39.1%	-	-	-	0.3	1.5	0.3
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	478	1940	1940	24.6%	-	-	-	0.2	1.2	0.2
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>23.7%</b>	<b>131</b>	<b>0</b>	<b>0</b>	<b>0.7</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	68	1940	1940	3.5%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	131	1940	632	20.7%	131	0	0	0.1	3.6	0.1
3/1	Mall Entry Left Ahead	U	-	-	-	-	486	2080	2080	23.4%	-	-	-	0.2	1.1	0.2
3/2	Mall Entry Ahead	U	-	-	-	-	342	1940	1940	17.6%	-	-	-	0.1	1.1	0.1
4/1	Mall Exit Ahead	U	-	-	-	-	493	2080	2080	23.7%	-	-	-	0.2	1.1	0.2
4/2	Mall Exit Ahead	U	-	-	-	-	398	1940	1940	20.5%	-	-	-	0.1	1.2	0.1
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		-24.0		Total Delay for Signalled Lanes (pcuHr):		76.21		Cycle Time (s):		114				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		0.6		Total Delay for Signalled Lanes (pcuHr):		57.59		Cycle Time (s):		114				
		PRC Over All Lanes (%):		-24.0		Total Delay Over All Lanes(pcuHr):		145.63								

## Appendix A

**Network Summary**

<b>Controller</b>	<b>Stream</b>	<b>PRC (%)</b>	<b>Total Delay for stream (pcuHr)</b>
C1 - Mains S Rd / Chalmers St	1	-23.95	76.21
C2 - Mains S Rd / Shands Rd	1	0.65	57.59
<b>Total Network Delay:</b> 145.63 pcuHr			
<b>Worst PRC:</b> -23.95 % (On Lane J1:4/3 in Stream 1)			
<b>Level Of Service:</b> E			



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**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead Arm J1:8 Left	Inf Inf	77.8 % 22.2 %	2080	2080
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	0.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:2 Left Arm J1:3 Ahead	Inf Inf	17.2 % 82.8 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

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Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead Arm J2:8 Left	Inf Inf	100.0 % 0.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

Appendix A

J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	12.4 % 87.6 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	0.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	14.0 % 86.0 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

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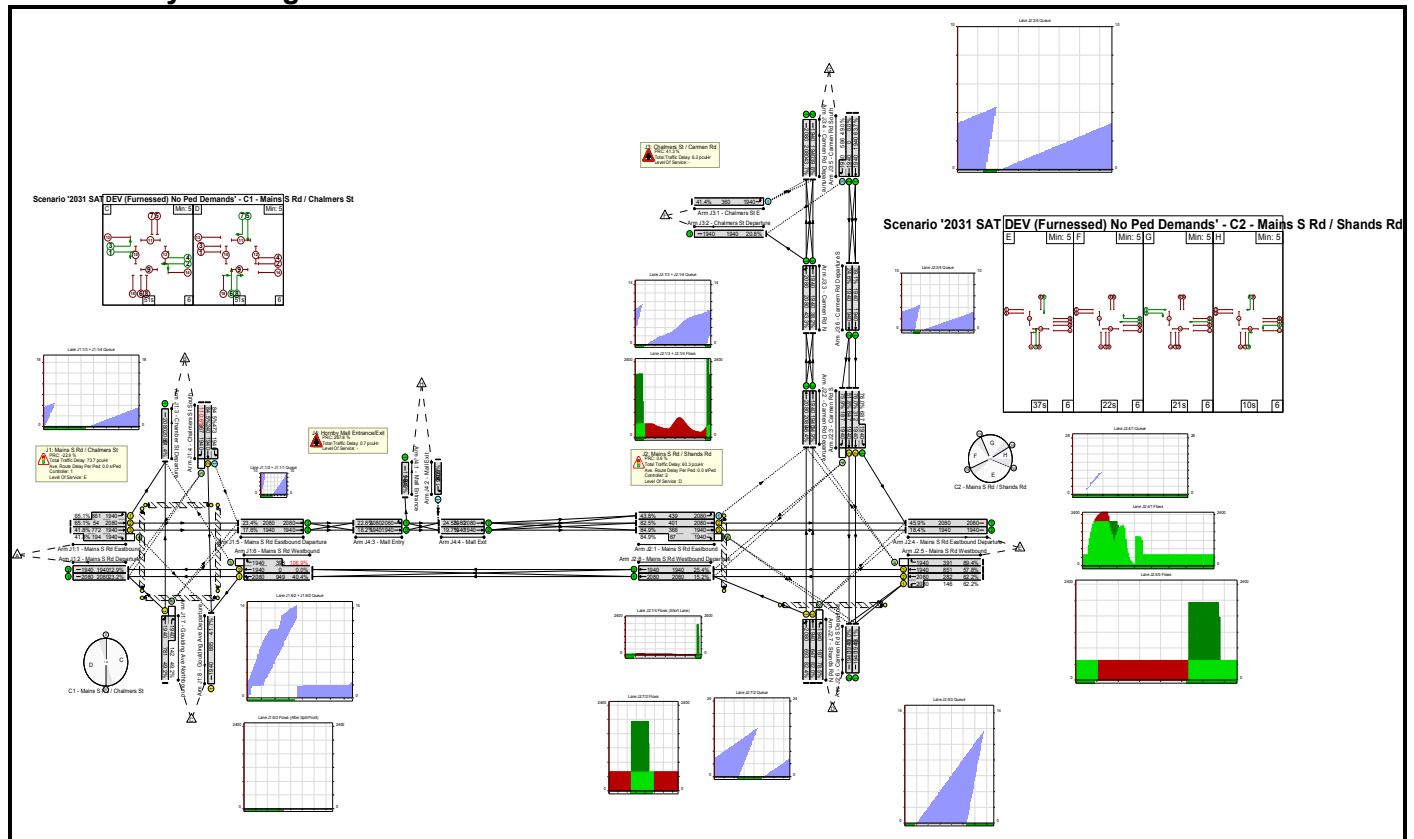
Travel Time Matrix, Delay Per PCU

Delay Per PCU :

	A	B	C	D	E	F	G	H
A	0.0	41.3	66.6	0.0	94.5	0.0	49.0	27.0
B	284.5	0.0	44.4	99.1	102.6	0.0	0.0	0.0
C	31.4	32.5	0.0	0.0	92.8	0.0	45.4	31.5
D	0.0	0.0	0.0	0.0	93.1	53.9	54.3	0.0
E	39.1	239.3	67.9	60.8	0.0	85.7	86.0	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	31.0	0.0
G	110.7	0.0	124.4	41.4	13.7	28.8	0.0	0.0
H	0.0	0.0	0.0	69.8	75.5	0.0	23.3	0.0

Scenario 20: '2031 SAT DEV (Furnished) No Ped Demands' (FG10: '2031 SAT Base + Dev', Plan 2: 'Plan 2 - No Ped Demands')

Network Layout Diagram



Appendix A  
Network Results

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	110.6%	1931	740	101	141.0	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	110.6%	1209	18	90	73.7	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	51	0	595	2080:1940	54+861	65.1 : 65.1%	-	-	-	4.8	29.1	14.8
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	51	-	404	1940:1940	772+194	41.8 : 41.8%	81	0	0	2.7	23.9	7.0
2/1	Mains S Rd Departure	U	-		-	-	-	494	2080	2080	23.2%	-	-	-	0.2	1.1	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	276	1940	1940	12.9%	-	-	-	0.1	1.1	0.1
3/1	Chamber St Departure	U	-		-	-	-	1304	2080	2080	61.4%	-	-	-	1.0	2.8	15.8
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	51	-	603	1940:1940	240+473	84.5 : 84.5%	382	18	0	4.7	28.3	13.1
4/3	Chalmers St South Right	O	C1:7		1	51	-	406	1940	367	110.6%	322	0	45	30.7	272.2	38.7
5/1	Mains S Rd Eastbound Dapature Ahead	U	-		-	-	-	486	2080	2080	23.4%	-	-	-	0.2	1.1	0.2
5/2	Mains S Rd Eastbound Dapature Ahead	U	-		-	-	-	342	1940	1940	17.6%	-	-	-	0.1	1.1	0.1
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	51	0	383	2080	949	40.4%	-	-	-	0.9	8.8	2.7
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	51	-	426	1940:1940	0+398	0.0 : 106.9%	354	0	45	23.2	196.3	33.7

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7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	51	0	454	1940:1940	781+142	49.2 : 49.2%	70	0	0	3.2	25.0	9.4
8/1	Goulding Ave Departure	U	C1:5		1	51	-	369	1940	885	41.7%	-	-	-	2.0	19.2	8.5
Ped Link: P1	Mains S Rd	-	C1:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Chalmers St Crossing	-	C1:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P4	Goulding Ave	-	C1:9		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>89.4%</b>	<b>155</b>	<b>722</b>	<b>11</b>	<b>60.3</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	192	2080	439	43.8%	98	94	0	0.8	14.1	4.2
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	21	-	331	2080	401	82.5%	-	-	-	6.3	68.8	12.2
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	21	-	368	1940:1940	366+67	84.9 : 84.9%	57	0	0	7.2	70.2	12.0
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	965	2080	2080	46.4%	-	-	-	0.5	1.9	9.8
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	678	1940	1940	34.9%	-	-	-	0.3	1.4	0.3
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	37	-	759	1940:1940	312+687	76.0 : 76.0%	-	-	-	3.6	16.9	9.7
3/3	Carmen Rd S Ahead	U	C2:6		1	37	-	335	1940	647	51.8%	-	-	-	3.4	36.4	9.0
3/4	Carmen Rd S Right	O	C2:8		1	10	-	142	1940	187	75.9%	0	140	2	3.5	87.6	5.9
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	954	2080	2080	45.9%	-	-	-	0.5	2.0	12.1

## Appendix A

4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	-	357	1940	1940	18.4%	-	-	-	0.1	1.1	0.1
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	49:10	0	266	2080:2080	282+146	62.2 : 62.2%	-	-	-	3.0	40.6	4.2
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	49	-	492	1940	851	57.8%	-	-	-	4.0	29.1	12.3
5/4	Mains S Rd Westbound Right	O	C2:5		1	22	-	350	1940	391	89.4%	0	344	6	7.9	81.3	14.4
6/1	Carmen Rd S Departure	U	-		-	-	-	351	1940	1940	18.1%	-	-	-	0.1	1.1	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	369	1940	1940	19.0%	-	-	-	0.1	1.1	0.1
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	37	0	571	2080	693	82.4%	-	-	-	7.8	49.1	18.7
7/2	Shands Rd N Ahead	U	C2:7		1	37	-	530	1940	647	82.0%	-	-	-	7.3	49.7	17.5
7/3	Shands Rd N Right	O	C2:9		1	10	-	147	1940	187	78.5%	0	144	3	3.7	91.7	6.2
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	316	2080	2080	15.2%	-	-	-	0.1	1.0	0.1
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	493	1940	1940	25.4%	-	-	-	0.2	1.2	0.2
Ped Link: P1	Shands Rd	-	C2:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Mains S Rd	-	C2:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>63.7%</b>	<b>436</b>	<b>0</b>	<b>0</b>	<b>6.3</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	149	1940	360	41.4%	149	0	0	1.2	28.5	3.5
2/1	Chalmers St Departure	U	-		-	-	-	403	1940	1940	20.8%	-	-	-	0.1	1.2	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	901	2080	2080	43.3%	-	-	-	0.4	1.5	0.4

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3/2	Carmen Rd N Ahead	U	-	-	-	-	742	1940	1940	38.2%	-	-	-	0.3	1.6	10.1
4/1	Carmen Rd Departure	U	-	-	-	-	908	2080	2080	43.7%	-	-	-	0.4	1.5	0.4
4/2	Carmen Rd Departure	U	-	-	-	-	768	1940	1940	39.6%	-	-	-	0.3	1.5	6.8
5/1	Carmen Rd South Ahead	U	-	-	-	-	1236	1940	1940	63.7%	-	-	-	0.9	2.6	0.9
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	287	1940:1940	0+586	0.0 : 49.0%	287	0	0	2.2	27.8	6.9
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	759	1940	1940	39.1%	-	-	-	0.3	1.5	0.3
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	477	1940	1940	24.6%	-	-	-	0.2	1.2	0.2
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>24.5%</b>	<b>131</b>	<b>0</b>	<b>0</b>	<b>0.7</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	68	1940	1940	3.5%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	131	1940	639	20.5%	131	0	0	0.1	3.5	0.1
3/1	Mall Entry Left Ahead	U	-	-	-	-	475	2080	2080	22.8%	-	-	-	0.1	1.1	0.1
3/2	Mall Entry Ahead	U	-	-	-	-	353	1940	1940	18.2%	-	-	-	0.1	1.1	0.1
4/1	Mall Exit Ahead	U	-	-	-	-	509	2080	2080	24.5%	-	-	-	0.2	1.1	0.2
4/2	Mall Exit Ahead	U	-	-	-	-	382	1940	1940	19.7%	-	-	-	0.1	1.2	0.1
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		-22.9		Total Delay for Signalled Lanes (pcuHr):		72.20		Cycle Time (s):		114				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		0.6		Total Delay for Signalled Lanes (pcuHr):		57.63		Cycle Time (s):		114				
		PRC Over All Lanes (%):		-22.9		Total Delay Over All Lanes(pcuHr):		140.98								



## Appendix A

**Network Summary**

<b>Controller</b>	<b>Stream</b>	<b>PRC (%)</b>	<b>Total Delay for stream (pcuHr)</b>
C1 - Mains S Rd / Chalmers St	1	-22.86	72.20
C2 - Mains S Rd / Shands Rd	1	0.65	57.63
<b>Total Network Delay:</b> 140.98 pcuHr			
<b>Worst PRC:</b> -22.86 % (On Lane J1:4/3 in Stream 1)			
<b>Level Of Service:</b> E			

Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead Arm J1:8 Left	Inf Inf	77.8 % 22.2 %	2080	2080
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	0.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:2 Left Arm J1:3 Ahead	Inf Inf	17.2 % 82.8 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

Appendix A

Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead Arm J2:8 Left	Inf Inf	100.0 % 0.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

Appendix A

J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	12.9 % 87.1 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	0.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	14.3 % 85.7 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

Appendix A

**Travel Time Matrix, Delay Per PCU**

**Delay Per PCU :**

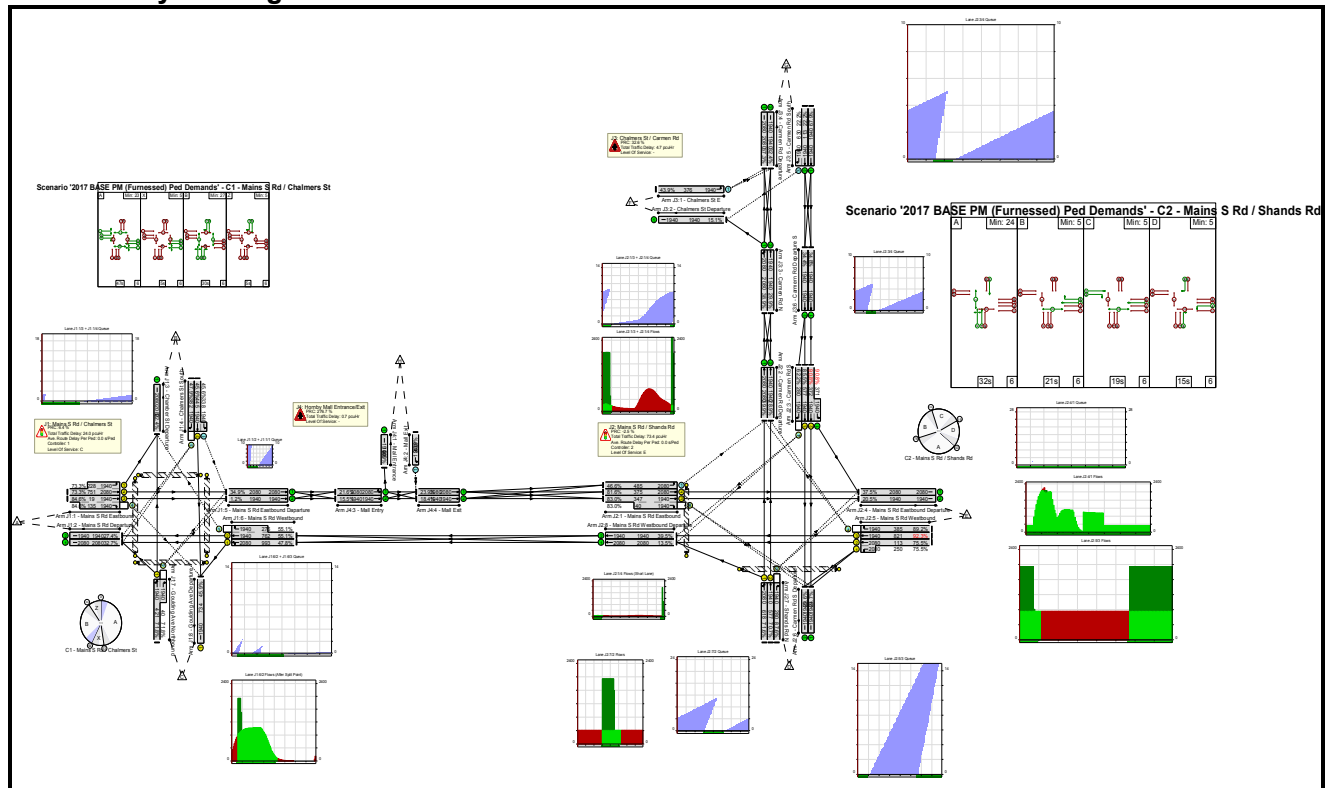
	A	B	C	D	E	F	G	H
A	0.0	32.3	66.8	0.0	94.6	0.0	48.7	26.6
B	273.3	0.0	44.3	99.6	102.6	0.0	0.0	0.0
C	26.0	27.1	0.0	0.0	86.4	0.0	42.5	28.7
D	0.0	0.0	0.0	0.0	93.1	53.8	54.2	0.0
E	36.7	230.2	67.1	60.8	0.0	85.6	85.9	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	30.0	0.0
G	108.7	0.0	123.4	41.4	13.8	29.0	0.0	0.0
H	0.0	0.0	0.0	70.1	75.5	0.0	23.2	0.0

Appendix A  
**Appendix A**

**User and Project Details**

<b>Project:</b>	
<b>Title:</b>	
<b>Location:</b>	
<b>Additional detail:</b>	
<b>File name:</b>	Denton Park - Hornby Mall - 111 Cycle Time PM Peak Flow OPT (Updated Phasing 4-04-18).lsg3x
<b>Author:</b>	
<b>Company:</b>	
<b>Address:</b>	

**Scenario 1: '2017 BASE PM (Furnished) Ped Demands' (FG1: '2017 Base PM', Plan 1: 'Plan 1 - Ped Demands')  
 Network Layout Diagram**



Appendix A

**Network Results**

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	<b>92.3%</b>	<b>1046</b>	<b>1041</b>	<b>23</b>	<b>102.7</b>	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	<b>84.6%</b>	<b>435</b>	<b>188</b>	<b>9</b>	<b>24.0</b>	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	47:41	41	718	2080:1940	751+228	73.3 : 73.3%	-	-	-	6.3	31.6	16.7
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	47	-	130	1940:1940	19+135	84.6 : 84.6%	40	69	5	3.4	93.2	4.4
2/1	Mains S Rd Departure	U	-		-	-	-	681	2080	2080	32.7%	-	-	-	0.2	1.3	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	532	1940	1940	27.4%	-	-	-	0.2	1.3	0.2
3/1	Chamber St Departure	U	-		-	-	-	466	2080	2080	22.4%	-	-	-	0.1	1.1	0.1
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	41	-	357	1940:1940	445+338	45.6 : 45.6%	132	22	0	2.1	21.4	6.9
4/3	Chalmers St South Right	O	C1:7		1	41	-	183	1940	382	47.9%	90	90	3	2.1	40.8	4.3
5/1	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	726	2080	2080	34.9%	-	-	-	0.3	1.3	4.9
5/2	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	24	1940	1940	1.2%	-	-	-	0.0	0.9	0.0
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	52	52	475	2080	993	47.8%	-	-	-	1.1	8.4	4.8
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	52	-	572	1940:1940	762+276	55.1 : 55.1%	145	7	1	1.3	8.1	2.9

Appendix A

7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	24:30	24	331	1940:1940	421+40	71.8 : 71.8%	29	0	0	4.9	52.9	10.1
8/1	Goulding Ave Departure	U	C1:5		1	41	-	337	1940	734	45.9%	-	-	-	2.0	21.5	6.9
Ped Link: P1	Mains S Rd	-	C1:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Chalmers St Crossing	-	C1:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Goulding Ave	-	C1:9		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>92.3%</b>	<b>153</b>	<b>854</b>	<b>14</b>	<b>73.4</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	226	2080	485	46.6%	120	106	0	0.7	11.3	5.0
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	19	-	306	2080	375	81.6%	-	-	-	5.4	63.9	11.2
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	19	-	321	1940:1940	347+40	83.0 : 83.0%	33	0	0	5.6	62.8	11.0
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	829	2080	2080	39.9%	-	-	-	0.4	1.6	7.4
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	561	1940	1940	28.9%	-	-	-	0.2	1.3	0.2
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	32	-	675	1940:1940	372+371	90.8 : 90.8%	-	-	-	8.4	44.7	19.1
3/3	Carmen Rd S Ahead	U	C2:6		1	32	-	493	1940	577	85.5%	-	-	-	7.8	56.9	17.0
3/4	Carmen Rd S Right	O	C2:8		1	15	-	174	1940	280	62.2%	0	171	3	3.0	61.5	5.8
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	779	2080	2080	37.5%	-	-	-	0.3	1.4	3.2



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4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	-	397	1940	1940	20.5%	-	-	-	0.1	1.2	0.1
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	46:15	0	274	2080:2080	113+250	75.5 : 75.5%	-	-	-	4.7	61.6	7.9
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	46	-	758	1940	821	92.3%	-	-	-	11.5	54.7	27.2
5/4	Mains S Rd Westbound Right	O	C2:5		1	21	-	343	1940	385	89.2%	0	337	6	7.7	80.4	13.8
6/1	Carmen Rd S Departure	U	-		-	-	-	479	1940	1940	24.7%	-	-	-	0.2	1.2	0.2
6/2	Carmen Rd S Departure	U	-		-	-	-	574	1940	1940	29.6%	-	-	-	0.2	1.3	0.2
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	32	26	443	2080	618	71.6%	-	-	-	5.5	44.9	13.4
7/2	Shands Rd N Ahead	U	C2:7		1	32	-	408	1940	577	70.7%	-	-	-	5.1	45.2	12.3
7/3	Shands Rd N Right	O	C2:9		1	15	-	245	1940	280	87.6%	0	241	4	6.2	90.8	10.4
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	280	2080	2080	13.5%	-	-	-	0.1	1.0	0.1
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	767	1940	1940	39.5%	-	-	-	0.3	1.5	0.3
Ped Link: P1	Shands Rd	-	C2:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Mains S Rd	-	C2:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>67.9%</b>	<b>305</b>	<b>0</b>	<b>0</b>	<b>4.7</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	165	1940	376	43.9%	165	0	0	1.2	25.6	3.6
2/1	Chalmers St Departure	U	-		-	-	-	292	1940	1940	15.1%	-	-	-	0.1	1.1	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	809	2080	2080	38.9%	-	-	-	0.3	1.4	0.3

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3/2	Carmen Rd N Ahead	U	-	-	-	-	581	1940	1940	29.9%	-	-	-	0.2	1.4	7.8	
4/1	Carmen Rd Departure	U	-	-	-	-	775	2080	2080	37.3%	-	-	-	0.3	1.4	0.3	
4/2	Carmen Rd Departure	U	-	-	-	-	628	1940	1940	32.4%	-	-	-	0.2	1.4	4.6	
5/1	Carmen Rd South Ahead	U	-	-	-	-	1317	1940	1940	67.9%	-	-	-	1.1	2.9	1.1	
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	165	1940:1940	113+630	22.2 : 22.2%	140	0	0	0.7	16.3	2.6	
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	675	1940	1940	34.8%	-	-	-	0.3	1.4	0.3	
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	667	1940	1940	34.4%	-	-	-	0.3	1.4	0.3	
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>23.9%</b>	<b>152</b>	<b>0</b>	<b>0</b>	<b>0.7</b>	-	-	
1/1	Mall Entrance	U	-	-	-	-	49	1940	1940	2.5%	-	-	-	0.0	1.0	0.0	
2/1	Mall Exit Left	O	-	-	-	-	152	1940	637	23.9%	152	0	0	0.2	3.7	0.2	
3/1	Mall Entry Left Ahead	U	-	-	-	-	449	2080	2080	21.6%	-	-	-	0.1	1.1	0.1	
3/2	Mall Entry Ahead	U	-	-	-	-	301	1940	1940	15.5%	-	-	-	0.1	1.1	0.1	
4/1	Mall Exit Ahead	U	-	-	-	-	497	2080	2080	23.9%	-	-	-	0.2	1.1	0.2	
4/2	Mall Exit Ahead	U	-	-	-	-	356	1940	1940	18.4%	-	-	-	0.1	1.1	0.1	
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		6.4		Total Delay for Signalled Lanes (pcuHr):		23.13		Cycle Time (s):		111					
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		-2.5		Total Delay for Signalled Lanes (pcuHr):		70.87		Cycle Time (s):		111					
		PRC Over All Lanes (%):		-2.5		Total Delay Over All Lanes(pcuHr):		102.71									

Appendix A

**Network Summary**

Controller	Stream	PRC (%)	Total Delay for stream (pcuHr)
C1 - Mains S Rd / Chalmers St	1	6.40	23.13
C2 - Mains S Rd / Shands Rd	1	-2.53	70.87
<b>Total Network Delay:</b> 102.71 pcuHr			
<b>Worst PRC:</b> -2.53 % (On Lane J2:5/3 in Stream 1)			
<b>Level Of Service:</b> D			

Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead	Inf	95.8 %	2080	2080
				Arm J1:8 Left	Inf	4.2 %		
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
				Arm J1:2 Left	Inf	51.3 %		
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:3 Ahead	Inf	48.7 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

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Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead	Inf	93.2 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:8 Left	Inf	6.8 %		
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

## Appendix A

J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	18.8 % 81.2 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	10.9 % 89.1 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

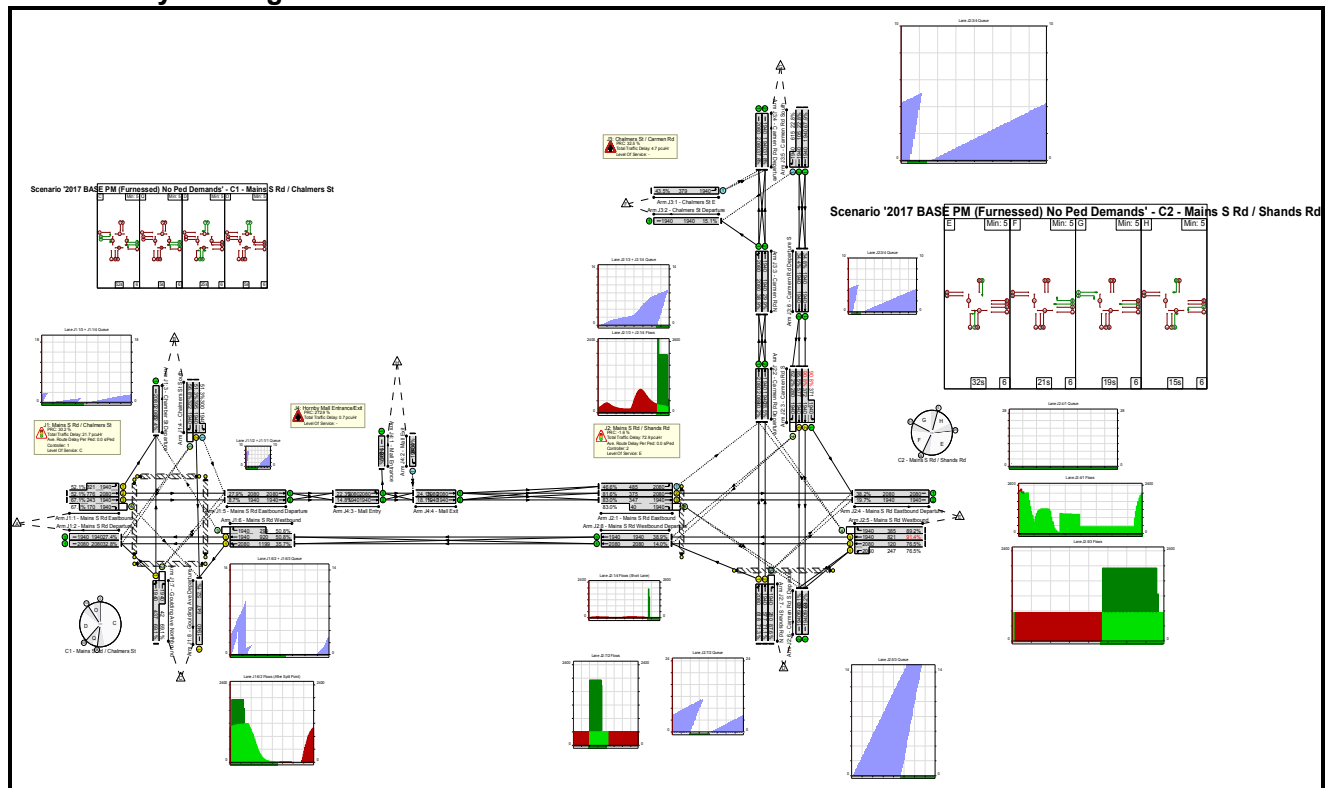
Appendix A

**Travel Time Matrix, Delay Per PCU  
Delay Per PCU :**

	A	B	C	D	E	F	G	H
A	0.0	33.4	138.0	90.2	99.4	0.0	53.9	34.8
B	42.1	0.0	38.4	81.8	83.3	29.6	29.9	0.0
C	54.3	54.1	0.0	0.0	125.3	0.0	66.1	54.5
D	87.2	108.4	133.9	0.0	92.1	49.1	49.4	0.0
E	62.9	73.5	91.3	65.6	0.0	84.3	84.6	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	27.0	0.0
G	75.2	74.0	87.7	63.0	36.9	19.7	0.0	0.0
H	0.0	0.0	0.0	69.9	74.2	0.0	20.1	0.0

**Scenario 2: '2017 BASE PM (Furnished) No Ped Demands' (FG1: '2017 Base PM', Plan 2: 'Plan 2 - No Ped Demands')**

**Network Layout Diagram**



Appendix A

**Network Results**

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	<b>91.4%</b>	<b>1133</b>	<b>960</b>	<b>17</b>	<b>99.9</b>	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	<b>69.1%</b>	<b>525</b>	<b>103</b>	<b>4</b>	<b>21.7</b>	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	52	0	571	2080:1940	776+321	52.1 : 52.1%	-	-	-	3.4	21.6	8.7
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	52	-	277	1940:1940	243+170	67.1 : 67.1%	114	0	0	3.3	42.9	3.9
2/1	Mains S Rd Departure	U	-		-	-	-	682	2080	2080	32.8%	-	-	-	0.2	1.3	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	531	1940	1940	27.4%	-	-	-	0.2	1.3	0.2
3/1	Chamber St Departure	U	-		-	-	-	466	2080	2080	22.4%	-	-	-	0.1	1.1	0.1
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	36	-	357	1940:1940	395+300	51.3 : 51.3%	132	22	0	2.5	25.6	7.6
4/3	Chalmers St South Right	O	C1:7		1	36	-	183	1940	322	56.8%	100	80	3	2.8	55.9	5.8
5/1	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	581	2080	2080	27.9%	-	-	-	0.2	1.2	2.0
5/2	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	169	1940	1940	8.7%	-	-	-	0.0	1.0	0.0
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	63	0	428	2080	1199	35.7%	-	-	-	0.8	7.0	5.1
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	63	-	619	1940:1940	920+299	50.8 : 50.8%	151	1	0	1.6	9.2	9.3



Appendix A

7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	25	0	331	1940:1940	437+42	69.1 : 69.1%	29	0	0	4.7	50.7	9.8
8/1	Goulding Ave Departure	U	C1:5		1	36	-	337	1940	647	52.1%	-	-	-	1.7	17.7	7.1
Ped Link: P1	Mains S Rd	-	C1:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Chalmers St Crossing	-	C1:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P4	Goulding Ave	-	C1:9		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>91.4%</b>	<b>151</b>	<b>857</b>	<b>14</b>	<b>72.9</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	226	2080	485	46.6%	118	108	0	0.6	8.8	2.2
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	19	-	306	2080	375	81.6%	-	-	-	5.4	63.3	11.3
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	19	-	321	1940:1940	347+40	83.0 : 83.0%	33	0	0	5.7	64.4	11.0
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	837	2080	2080	40.2%	-	-	-	0.4	1.6	7.4
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	553	1940	1940	28.5%	-	-	-	0.2	1.3	0.2
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	32	-	675	1940:1940	372+371	90.8 : 90.8%	-	-	-	8.4	44.7	19.1
3/3	Carmen Rd S Ahead	U	C2:6		1	32	-	493	1940	577	85.5%	-	-	-	7.8	56.9	17.0
3/4	Carmen Rd S Right	O	C2:8		1	15	-	174	1940	280	62.2%	0	171	3	3.0	61.5	5.8
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	794	2080	2080	38.2%	-	-	-	0.3	1.4	3.2

Appendix A

4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	-	382	1940	1940	19.7%	-	-	-	0.1	1.2	0.1
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	46:15	0	281	2080:2080	120+247	76.5 : 76.5%	-	-	-	4.8	62.0	8.1
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	46	-	751	1940	821	91.4%	-	-	-	11.0	52.6	26.4
5/4	Mains S Rd Westbound Right	O	C2:5		1	21	-	343	1940	385	89.2%	0	337	6	7.7	80.4	13.8
6/1	Carmen Rd S Departure	U	-		-	-	-	469	1940	1940	24.2%	-	-	-	0.2	1.2	0.2
6/2	Carmen Rd S Departure	U	-		-	-	-	584	1940	1940	30.1%	-	-	-	0.2	1.3	0.2
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	32	0	441	2080	618	71.3%	-	-	-	5.5	44.8	13.2
7/2	Shands Rd N Ahead	U	C2:7		1	32	-	410	1940	577	71.1%	-	-	-	5.2	45.4	12.4
7/3	Shands Rd N Right	O	C2:9		1	15	-	245	1940	280	87.6%	0	241	4	6.2	90.8	10.4
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	292	2080	2080	14.0%	-	-	-	0.1	1.0	0.1
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	755	1940	1940	38.9%	-	-	-	0.3	1.5	0.3
Ped Link: P1	Shands Rd	-	C2:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Mains S Rd	-	C2:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>67.9%</b>	<b>305</b>	<b>0</b>	<b>0</b>	<b>4.7</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	165	1940	379	43.5%	165	0	0	1.2	25.2	3.5
2/1	Chalmers St Departure	U	-		-	-	-	292	1940	1940	15.1%	-	-	-	0.1	1.1	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	809	2080	2080	38.9%	-	-	-	0.3	1.4	0.3

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3/2	Carmen Rd N Ahead	U	-	-	-	-	581	1940	1940	29.9%	-	-	-	0.2	1.5	8.4
4/1	Carmen Rd Departure	U	-	-	-	-	786	2080	2080	37.8%	-	-	-	0.3	1.4	0.3
4/2	Carmen Rd Departure	U	-	-	-	-	617	1940	1940	31.8%	-	-	-	0.2	1.4	5.1
5/1	Carmen Rd South Ahead	U	-	-	-	-	1318	1940	1940	67.9%	-	-	-	1.1	2.9	1.1
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	164	1940:1940	105+615	22.8 : 22.8%	140	0	0	0.8	16.5	2.6
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	675	1940	1940	34.8%	-	-	-	0.3	1.4	0.3
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	667	1940	1940	34.4%	-	-	-	0.3	1.4	0.3
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>24.1%</b>	<b>152</b>	<b>0</b>	<b>0</b>	<b>0.7</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	49	1940	1940	2.5%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	152	1940	634	24.0%	152	0	0	0.2	3.7	0.2
3/1	Mall Entry Left Ahead	U	-	-	-	-	463	2080	2080	22.3%	-	-	-	0.1	1.1	0.1
3/2	Mall Entry Ahead	U	-	-	-	-	287	1940	1940	14.8%	-	-	-	0.1	1.1	0.1
4/1	Mall Exit Ahead	U	-	-	-	-	502	2080	2080	24.1%	-	-	-	0.2	1.1	0.2
4/2	Mall Exit Ahead	U	-	-	-	-	351	1940	1940	18.1%	-	-	-	0.1	1.1	0.1
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		30.2		Total Delay for Signalled Lanes (pcuHr):		20.83		Cycle Time (s):		111				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		-1.6		Total Delay for Signalled Lanes (pcuHr):		70.58		Cycle Time (s):		111				
		PRC Over All Lanes (%):		-1.6		Total Delay Over All Lanes(pcuHr):		99.92								

Appendix A

**Network Summary**

<b>Controller</b>	<b>Stream</b>	<b>PRC (%)</b>	<b>Total Delay for stream (pcuHr)</b>
C1 - Mains S Rd / Chalmers St	1	30.16	20.83
C2 - Mains S Rd / Shands Rd	1	-1.58	70.58
<b>Total Network Delay:</b> 99.92 pcuHr			
<b>Worst PRC:</b> -1.58 % (On Lane J2:5/3 in Stream 1)			
<b>Level Of Service:</b> D			

Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead	Inf	95.3 %	2080	2080
				Arm J1:8 Left	Inf	4.7 %		
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
				Arm J1:2 Left	Inf	51.3 %		
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:3 Ahead	Inf	48.7 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

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Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead	Inf	93.2 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:8 Left	Inf	6.8 %		
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

Appendix A

J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	18.8 % 81.2 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

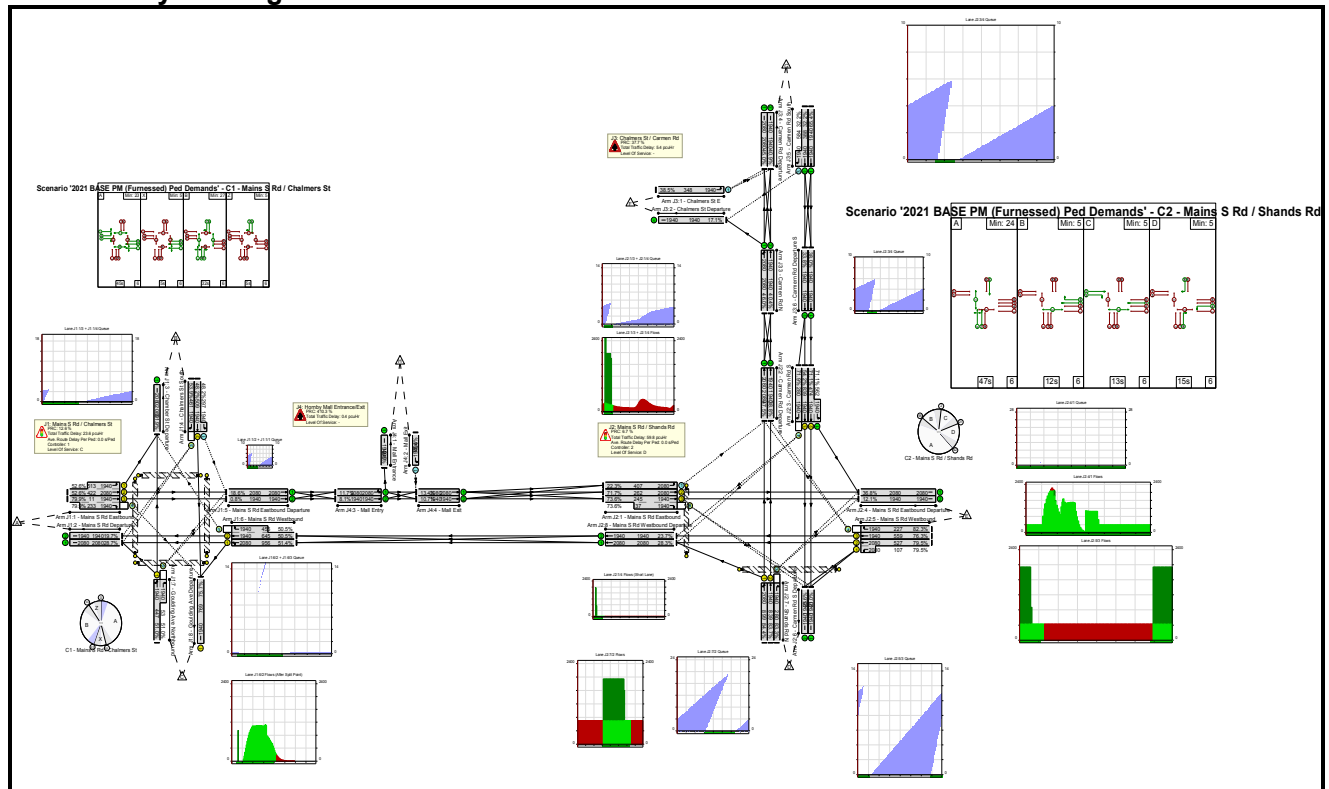
Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	10.6 % 89.4 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

Appendix A

**Travel Time Matrix, Delay Per PCU  
Delay Per PCU :**

	A	B	C	D	E	F	G	H
A	0.0	21.1	89.1	74.8	84.2	0.0	39.2	26.8
B	57.1	0.0	45.0	104.0	106.5	32.5	32.8	0.0
C	51.8	51.7	0.0	0.0	155.9	0.0	69.2	55.6
D	73.0	81.6	111.0	0.0	92.1	49.1	49.5	0.0
E	63.0	71.7	102.8	66.2	0.0	84.3	84.6	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	26.6	0.0
G	70.5	71.9	96.0	63.0	36.9	19.9	0.0	0.0
H	0.0	0.0	0.0	70.0	74.3	0.0	19.1	0.0

**Scenario 3: '2021 BASE PM (Furnished) Ped Demands' (FG3: '2021 Base PM', Plan 1: 'Plan 1 - Ped Demands')  
Network Layout Diagram**





Appendix A

**Network Results**

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	<b>84.4%</b>	<b>1117</b>	<b>850</b>	<b>61</b>	<b>89.3</b>	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	<b>79.9%</b>	<b>585</b>	<b>199</b>	<b>50</b>	<b>23.6</b>	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	45:39	39	492	2080:1940	422+513	52.6 : 52.6%	-	-	-	3.8	28.1	6.7
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	45	-	195	1940:1940	11+233	79.9 : 79.9%	73	70	44	3.4	62.6	5.5
2/1	Mains S Rd Departure	U	-		-	-	-	596	2080	2080	28.7%	-	-	-	0.2	1.2	2.1
2/2	Mains S Rd Departure	U	-		-	-	-	383	1940	1940	19.7%	-	-	-	0.1	1.2	0.1
3/1	Chamber St Departure	U	-		-	-	-	663	2080	2080	31.9%	-	-	-	0.2	1.3	1.4
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	43	-	388	1940:1940	509+297	48.2 : 48.2%	122	21	0	2.5	22.8	8.1
4/3	Chalmers St South Right	O	C1:7		1	43	-	248	1940	461	53.9%	154	90	4	2.7	39.4	7.0
5/1	Mains S Rd Eastbound Departure Ahead	U	-		-	-	-	386	2080	2080	18.6%	-	-	-	0.1	1.1	0.1
5/2	Mains S Rd Eastbound Departure Ahead	U	-		-	-	-	15	1940	1940	0.8%	-	-	-	0.0	0.9	0.0
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	50	50	491	2080	956	51.4%	-	-	-	1.1	8.4	1.7
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	50	-	556	1940:1940	645+455	50.5 : 50.5%	210	19	2	0.8	4.9	19.0

Appendix A

7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	26:32	26	255	1940:1940	447+53	51.0 : 51.0%	27	0	0	3.1	43.4	6.6
8/1	Goulding Ave Departure	U	C1:5		1	43	-	582	1940	769	75.7%	-	-	-	5.6	34.5	18.6
Ped Link: P1	Mains S Rd	-	C1:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Chalmers St Crossing	-	C1:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Goulding Ave	-	C1:9		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>84.4%</b>	<b>77</b>	<b>651</b>	<b>11</b>	<b>59.8</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	91	2080	407	22.3%	50	41	0	0.4	17.2	1.8
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	13	-	188	2080	262	71.7%	-	-	-	3.5	67.9	6.8
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	13	-	207	1940:1940	245+37	73.6 : 73.6%	27	0	0	3.9	67.5	6.6
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	987	2080	2080	47.5%	-	-	-	0.5	1.9	8.7
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	752	1940	1940	38.8%	-	-	-	0.3	1.5	0.3
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	47	-	737	1940:1940	474+562	71.1 : 71.1%	-	-	-	3.6	17.5	12.4
3/3	Carmen Rd S Ahead	U	C2:6		1	47	-	455	1940	839	54.2%	-	-	-	3.5	28.0	11.0
3/4	Carmen Rd S Right	O	C2:8		1	15	-	201	1940	280	71.9%	0	197	4	3.8	67.5	7.1
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	766	2080	2080	36.8%	-	-	-	0.3	1.4	2.6

Appendix A

4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	-	235	1940	1940	12.1%	-	-	-	0.1	1.1	0.1
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	31:15	0	504	2080:2080	527+107	79.5 : 79.5%	-	-	-	7.0	50.3	15.3
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	31	-	427	1940	559	76.3%	-	-	-	5.9	49.3	13.6
5/4	Mains S Rd Westbound Right	O	C2:5		1	12	-	187	1940	227	82.3%	0	184	3	4.6	88.4	7.7
6/1	Carmen Rd S Departure	U	-		-	-	-	407	1940	1940	21.0%	-	-	-	0.1	1.2	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	497	1940	1940	25.6%	-	-	-	0.2	1.2	0.2
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	47	41	759	2080	899	84.4%	-	-	-	8.5	40.5	23.5
7/2	Shands Rd N Ahead	U	C2:7		1	47	-	702	1940	839	83.7%	-	-	-	7.9	40.7	21.6
7/3	Shands Rd N Right	O	C2:9		1	15	-	233	1940	280	83.3%	0	229	4	5.3	81.4	9.2
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	588	2080	2080	28.3%	-	-	-	0.2	1.2	1.9
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	459	1940	1940	23.7%	-	-	-	0.2	1.2	0.2
Ped Link: P1	Shands Rd	-	C2:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Mains S Rd	-	C2:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>65.4%</b>	<b>322</b>	<b>0</b>	<b>0</b>	<b>5.4</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	134	1940	348	38.5%	134	0	0	1.0	28.2	3.0
2/1	Chalmers St Departure	U	-		-	-	-	331	1940	1940	17.1%	-	-	-	0.1	1.1	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	956	2080	2080	46.0%	-	-	-	0.4	1.6	0.4

Appendix A

3/2	Carmen Rd N Ahead	U	-	-	-	-	783	1940	1940	40.4%	-	-	-	0.3	1.6	10.6
4/1	Carmen Rd Departure	U	-	-	-	-	936	2080	2080	45.0%	-	-	-	0.4	1.6	0.4
4/2	Carmen Rd Departure	U	-	-	-	-	794	1940	1940	40.9%	-	-	-	0.3	1.6	0.3
5/1	Carmen Rd South Ahead	U	-	-	-	-	1268	1940	1940	65.4%	-	-	-	0.9	2.7	0.9
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	313	1940:1940	388+584	32.2 : 32.2%	188	0	0	1.3	14.5	3.9
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	737	1940	1940	38.0%	-	-	-	0.3	1.5	0.3
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	656	1940	1940	33.8%	-	-	-	0.3	1.4	0.3
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>17.6%</b>	<b>133</b>	<b>0</b>	<b>0</b>	<b>0.4</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	48	1940	1940	2.5%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	133	1940	754	17.6%	133	0	0	0.1	2.9	0.1
3/1	Mall Entry Left Ahead	U	-	-	-	-	243	2080	2080	11.7%	-	-	-	0.1	1.0	0.1
3/2	Mall Entry Ahead	U	-	-	-	-	158	1940	1940	8.1%	-	-	-	0.0	1.0	0.0
4/1	Mall Exit Ahead	U	-	-	-	-	278	2080	2080	13.4%	-	-	-	0.1	1.0	0.1
4/2	Mall Exit Ahead	U	-	-	-	-	208	1940	1940	10.7%	-	-	-	0.1	1.0	0.1
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		12.6		Total Delay for Signalled Lanes (pcuHr):		22.96		Cycle Time (s):		111				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		6.7		Total Delay for Signalled Lanes (pcuHr):		57.56		Cycle Time (s):		111				
		PRC Over All Lanes (%):		6.7		Total Delay Over All Lanes(pcuHr):		89.29								

Appendix A

**Network Summary**

Controller	Stream	PRC (%)	Total Delay for stream (pcuHr)
C1 - Mains S Rd / Chalmers St	1	12.63	22.96
C2 - Mains S Rd / Shands Rd	1	6.66	57.56
<b>Total Network Delay:</b> 89.29 pcuHr			
<b>Worst PRC:</b> 6.66 % (On Lane J2:7/1 in Stream 1)			
<b>Level Of Service:</b> D			

Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead	Inf	69.2 %	2080	2080
				Arm J1:8 Left	Inf	30.8 %		
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
				Arm J1:2 Left	Inf	28.5 %		
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:3 Ahead	Inf	71.5 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

Appendix A

Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead	Inf	100.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:8 Left	Inf	0.0 %		
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

Appendix A

J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	15.0 % 85.0 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	19.8 % 80.2 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940



Appendix A

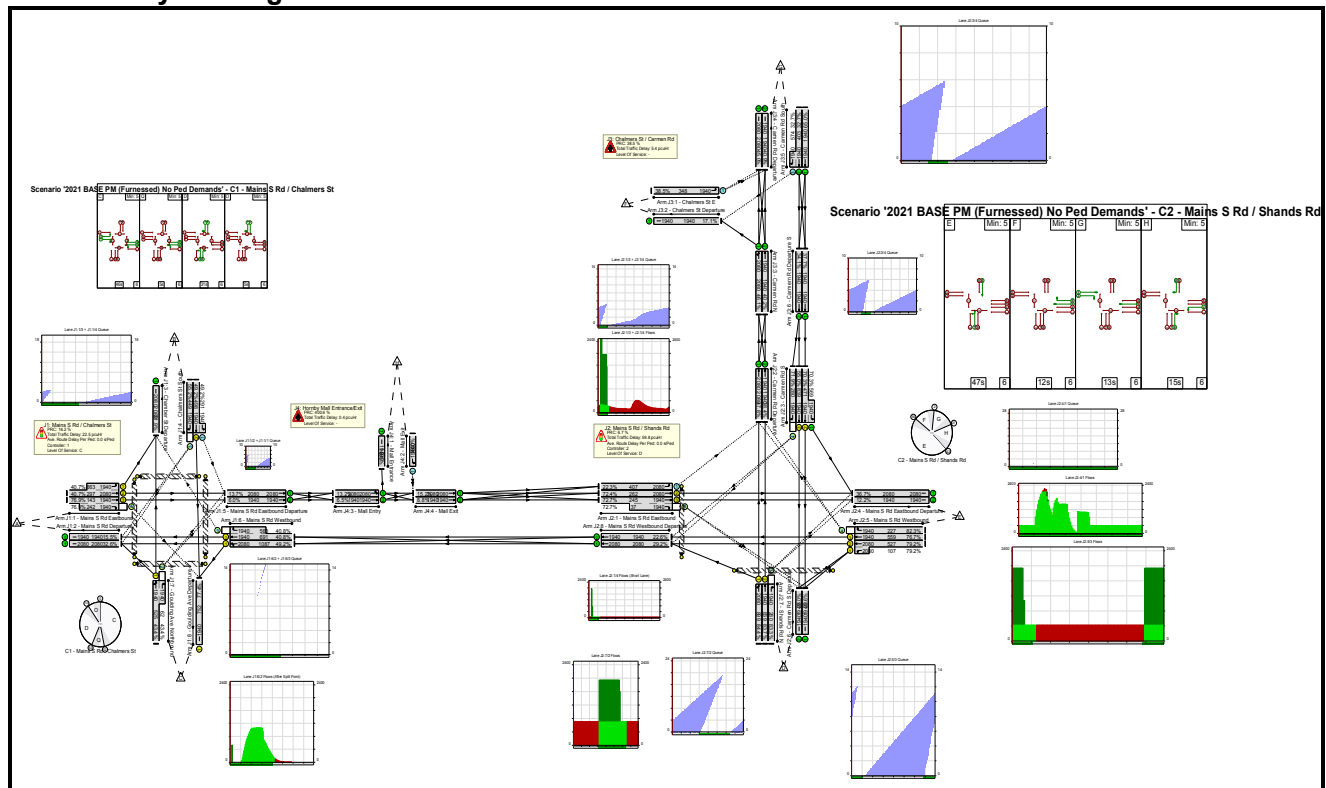
**Travel Time Matrix, Delay Per PCU**

**Delay Per PCU :**

	A	B	C	D	E	F	G	H
A	0.0	31.7	116.8	0.0	100.8	0.0	57.6	28.4
B	40.7	0.0	50.4	0.0	83.2	0.0	0.0	0.0
C	44.5	44.6	0.0	0.0	109.2	0.0	57.7	46.8
D	0.0	0.0	0.0	0.0	82.7	45.0	45.5	0.0
E	56.7	56.4	90.0	57.0	0.0	92.8	93.2	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	29.8	0.0
G	86.6	0.0	115.2	33.4	14.0	23.5	0.0	0.0
H	0.0	0.0	0.0	71.7	75.0	0.0	23.2	0.0

**Scenario 4: '2021 BASE PM (Furnished) No Ped Demands' (FG3: '2021 Base PM', Plan 2: 'Plan 2 - No Ped Demands')**

**Network Layout Diagram**



Appendix A

**Network Results**

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	84.4%	1261	708	60	88.2	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	77.4%	728	57	48	22.5	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	46	0	391	2080:1940	297+663	40.7 : 40.7%	-	-	-	2.6	24.0	5.9
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	46	-	296	1940:1940	143+242	76.9 : 76.9%	143	0	43	3.7	45.2	5.4
2/1	Mains S Rd Departure	U	-		-	-	-	678	2080	2080	32.6%	-	-	-	0.2	1.3	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	301	1940	1940	15.5%	-	-	-	0.1	1.1	0.1
3/1	Chamber St Departure	U	-		-	-	-	663	2080	2080	31.9%	-	-	-	0.2	1.3	0.8
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	42	-	388	1940:1940	498+291	49.2 : 49.2%	122	21	0	2.5	23.6	8.2
4/3	Chalmers St South Right	O	C1:7		1	42	-	248	1940	449	55.2%	223	20	4	3.0	44.2	7.1
5/1	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	284	2080	2080	13.7%	-	-	-	0.1	1.0	0.1
5/2	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	117	1940	1940	6.0%	-	-	-	0.0	1.0	0.0
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	57	0	535	2080	1087	49.2%	-	-	-	1.0	6.8	1.7
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	57	-	512	1940:1940	691+563	40.8 : 40.8%	212	16	1	0.5	3.4	16.7

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7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	31	0	255	1940:1940	525+62	43.4 : 43.4%	27	0	0	2.7	37.9	6.1
8/1	Goulding Ave Departure	U	C1:5		1	42	-	582	1940	752	77.4%	-	-	-	5.7	35.5	18.8
Ped Link: P1	Mains S Rd	-	C1:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Chalmers St Crossing	-	C1:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P4	Goulding Ave	-	C1:9		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>84.4%</b>	<b>77</b>	<b>651</b>	<b>11</b>	<b>59.8</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	91	2080	407	22.3%	50	41	0	0.4	17.5	1.8
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	13	-	190	2080	262	72.4%	-	-	-	3.6	68.9	6.9
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	13	-	205	1940:1940	245+37	72.7 : 72.7%	27	0	0	3.8	67.3	6.5
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	994	2080	2080	47.8%	-	-	-	0.5	1.9	8.7
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	745	1940	1940	38.4%	-	-	-	0.3	1.5	0.3
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	47	-	731	1940:1940	471+569	70.3 : 70.3%	-	-	-	3.5	17.0	11.9
3/3	Carmen Rd S Ahead	U	C2:6		1	47	-	461	1940	839	55.0%	-	-	-	3.6	28.2	11.1
3/4	Carmen Rd S Right	O	C2:8		1	15	-	201	1940	280	71.9%	0	197	4	3.8	67.5	7.1
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	764	2080	2080	36.7%	-	-	-	0.3	1.4	2.6

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4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	-	237	1940	1940	12.2%	-	-	-	0.1	1.1	0.1
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	31:15	0	502	2080:2080	527+107	79.2 : 79.2%	-	-	-	7.0	50.1	15.2
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	31	-	429	1940	559	76.7%	-	-	-	5.9	49.6	13.6
5/4	Mains S Rd Westbound Right	O	C2:5		1	12	-	187	1940	227	82.3%	0	184	3	4.6	88.4	7.7
6/1	Carmen Rd S Departure	U	-		-	-	-	400	1940	1940	20.6%	-	-	-	0.1	1.2	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	504	1940	1940	26.0%	-	-	-	0.2	1.3	0.2
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	47	0	759	2080	899	84.4%	-	-	-	8.5	40.5	23.5
7/2	Shands Rd N Ahead	U	C2:7		1	47	-	702	1940	839	83.7%	-	-	-	7.9	40.7	21.6
7/3	Shands Rd N Right	O	C2:9		1	15	-	233	1940	280	83.3%	0	229	4	5.3	81.4	9.2
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	608	2080	2080	29.2%	-	-	-	0.2	1.3	6.0
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	439	1940	1940	22.6%	-	-	-	0.1	1.2	0.1
Ped Link: P1	Shands Rd	-	C2:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Mains S Rd	-	C2:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>65.0%</b>	<b>322</b>	<b>0</b>	<b>0</b>	<b>5.4</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	134	1940	348	38.5%	134	0	0	1.0	28.2	3.0
2/1	Chalmers St Departure	U	-		-	-	-	331	1940	1940	17.1%	-	-	-	0.1	1.1	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	959	2080	2080	46.1%	-	-	-	0.4	1.6	0.4

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3/2	Carmen Rd N Ahead	U	-	-	-	-	780	1940	1940	40.2%	-	-	-	0.3	1.6	12.2
4/1	Carmen Rd Departure	U	-	-	-	-	936	2080	2080	45.0%	-	-	-	0.4	1.6	0.4
4/2	Carmen Rd Departure	U	-	-	-	-	794	1940	1940	40.9%	-	-	-	0.3	1.6	0.3
5/1	Carmen Rd South Ahead	U	-	-	-	-	1261	1940	1940	65.0%	-	-	-	0.9	2.6	0.9
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	320	1940:1940	403+574	32.7 : 32.7%	188	0	0	1.3	14.3	4.0
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	731	1940	1940	37.7%	-	-	-	0.3	1.5	0.3
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	662	1940	1940	34.1%	-	-	-	0.3	1.4	0.3
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>18.0%</b>	<b>133</b>	<b>0</b>	<b>0</b>	<b>0.4</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	48	1940	1940	2.5%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	133	1940	740	18.0%	133	0	0	0.1	3.0	0.1
3/1	Mall Entry Left Ahead	U	-	-	-	-	275	2080	2080	13.2%	-	-	-	0.1	1.0	0.1
3/2	Mall Entry Ahead	U	-	-	-	-	126	1940	1940	6.5%	-	-	-	0.0	1.0	0.0
4/1	Mall Exit Ahead	U	-	-	-	-	316	2080	2080	15.2%	-	-	-	0.1	1.0	0.1
4/2	Mall Exit Ahead	U	-	-	-	-	170	1940	1940	8.8%	-	-	-	0.0	1.0	0.0
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		16.2		Total Delay for Signalled Lanes (pcuHr):		21.83		Cycle Time (s):		111				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		6.7		Total Delay for Signalled Lanes (pcuHr):		57.54		Cycle Time (s):		111				
		PRC Over All Lanes (%):		6.7		Total Delay Over All Lanes(pcuHr):		88.17								

Appendix A

**Network Summary**

Controller	Stream	PRC (%)	Total Delay for stream (pcuHr)
C1 - Mains S Rd / Chalmers St	1	16.22	21.83
C2 - Mains S Rd / Shands Rd	1	6.66	57.54
<b>Total Network Delay:</b> 88.17 pcuHr			
<b>Worst PRC:</b> 6.66 % (On Lane J2:7/1 in Stream 1)			
<b>Level Of Service:</b> D			

Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead	Inf	71.8 %	2080	2080
				Arm J1:8 Left	Inf	28.2 %		
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
				Arm J1:2 Left	Inf	28.5 %		
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:3 Ahead	Inf	71.5 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

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Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead	Inf	100.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:8 Left	Inf	0.0 %		
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080



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J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	14.9 % 85.1 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	17.5 % 82.5 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

Appendix A

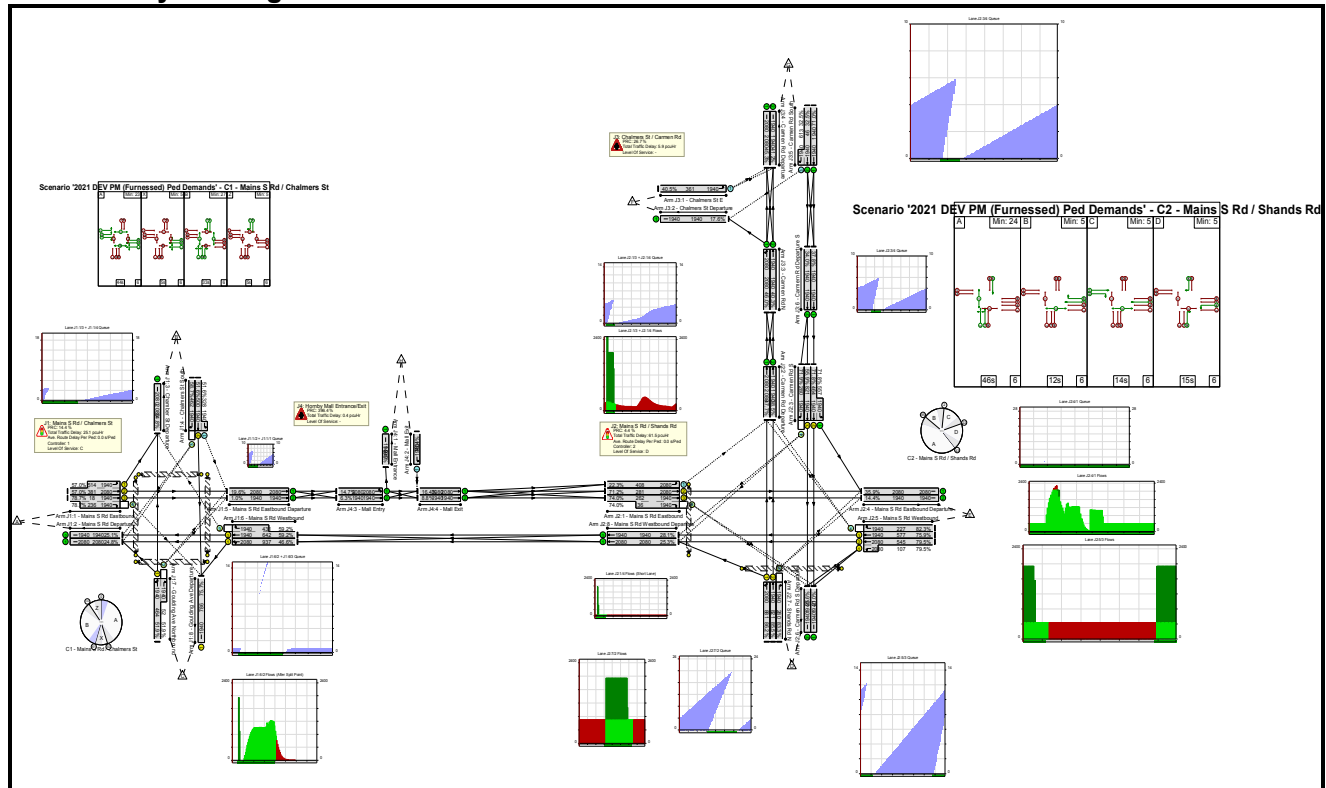
**Travel Time Matrix, Delay Per PCU**

**Delay Per PCU :**

	A	B	C	D	E	F	G	H
A	0.0	25.9	103.3	0.0	107.3	0.0	58.8	28.2
B	45.5	0.0	52.4	0.0	84.2	0.0	0.0	0.0
C	38.6	38.5	0.0	0.0	111.0	0.0	56.8	45.7
D	0.0	0.0	0.0	0.0	82.7	45.0	45.5	0.0
E	55.6	55.1	90.6	56.8	0.0	92.8	93.2	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	29.8	0.0
G	84.7	0.0	113.7	33.4	13.5	23.5	0.0	0.0
H	0.0	0.0	0.0	71.1	75.0	0.0	23.4	0.0

**Scenario 5: '2021 DEV PM (Furnished) Ped Demands' (FG4: '2021 Base + Dev PM', Plan 1: 'Plan 1 - Ped Demands')**

**Network Layout Diagram**



Appendix A

**Network Results**

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	<b>86.2%</b>	<b>1189</b>	<b>873</b>	<b>63</b>	<b>92.9</b>	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	<b>78.7%</b>	<b>640</b>	<b>217</b>	<b>51</b>	<b>25.1</b>	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	44:38	38	510	2080:1940	381+514	57.0 : 57.0%	-	-	-	4.2	29.8	7.5
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	44	-	200	1940:1940	18+236	78.7 : 78.7%	72	70	44	3.3	59.8	5.5
2/1	Mains S Rd Departure	U	-		-	-	-	516	2080	2080	24.8%	-	-	-	0.2	1.2	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	486	1940	1940	25.1%	-	-	-	0.2	1.2	0.2
3/1	Chamber St Departure	U	-		-	-	-	724	2080	2080	34.8%	-	-	-	0.3	1.3	2.6
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	44	-	427	1940:1940	500+328	51.6 : 51.6%	145	24	0	2.7	22.7	8.8
4/3	Chalmers St South Right	O	C1:7		1	44	-	271	1940	462	58.7%	170	97	5	3.1	41.2	7.9
5/1	Mains S Rd Eastbound Departure Ahead	U	-		-	-	-	408	2080	2080	19.6%	-	-	-	0.1	1.1	0.1
5/2	Mains S Rd Eastbound Departure Ahead	U	-		-	-	-	19	1940	1940	1.0%	-	-	-	0.0	0.9	0.0
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	49	49	437	2080	937	46.6%	-	-	-	1.0	8.4	1.6
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	49	-	635	1940:1940	642+431	59.2 : 59.2%	227	26	2	1.3	7.2	19.1

Appendix A

7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	27:33	27	268	1940:1940	464+52	51.9 : 51.9%	27	0	0	3.2	42.6	7.0
8/1	Goulding Ave Departure	U	C1:5		1	44	-	595	1940	786	75.7%	-	-	-	5.6	34.0	18.9
Ped Link: P1	Mains S Rd	-	C1:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Chalmers St Crossing	-	C1:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Goulding Ave	-	C1:9		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>86.2%</b>	<b>71</b>	<b>656</b>	<b>11</b>	<b>61.5</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	91	2080	408	22.3%	44	47	0	0.5	17.9	1.8
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	14	-	200	2080	281	71.2%	-	-	-	3.6	64.8	7.1
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	14	-	221	1940:1940	262+36	74.0 : 74.0%	27	0	0	4.1	66.1	7.1
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	992	2080	2080	47.7%	-	-	-	0.5	1.9	9.2
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	747	1940	1940	38.5%	-	-	-	0.3	1.5	0.3
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	46	-	733	1940:1940	464+557	71.8 : 71.8%	-	-	-	3.7	18.0	12.6
3/3	Carmen Rd S Ahead	U	C2:6		1	46	-	459	1940	821	55.9%	-	-	-	3.7	29.1	11.2
3/4	Carmen Rd S Right	O	C2:8		1	15	-	201	1940	280	71.9%	0	197	4	3.8	67.5	7.1
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	747	2080	2080	35.9%	-	-	-	0.3	1.4	2.7

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4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	-	280	1940	1940	14.4%	-	-	-	0.1	1.1	0.1
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	32:15	0	518	2080:2080	545+107	79.5 : 79.5%	-	-	-	7.1	49.4	15.7
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	32	-	438	1940	577	75.9%	-	-	-	5.9	48.1	13.7
5/4	Mains S Rd Westbound Right	O	C2:5		1	12	-	187	1940	227	82.3%	0	184	3	4.6	88.4	7.7
6/1	Carmen Rd S Departure	U	-		-	-	-	407	1940	1940	21.0%	-	-	-	0.1	1.2	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	497	1940	1940	25.6%	-	-	-	0.2	1.2	0.2
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	46	40	759	2080	881	86.2%	-	-	-	9.1	43.2	24.1
7/2	Shands Rd N Ahead	U	C2:7		1	46	-	702	1940	821	85.5%	-	-	-	8.4	43.3	22.3
7/3	Shands Rd N Right	O	C2:9		1	15	-	233	1940	280	83.3%	0	229	4	5.3	81.4	9.2
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	526	2080	2080	25.3%	-	-	-	0.2	1.2	0.2
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	546	1940	1940	28.1%	-	-	-	0.2	1.3	0.2
Ped Link: P1	Shands Rd	-	C2:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Mains S Rd	-	C2:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>71.0%</b>	<b>345</b>	<b>0</b>	<b>0</b>	<b>5.9</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	146	1940	361	40.5%	146	0	0	1.1	27.8	3.3
2/1	Chalmers St Departure	U	-		-	-	-	342	1940	1940	17.6%	-	-	-	0.1	1.1	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	957	2080	2080	46.0%	-	-	-	0.4	1.6	0.4

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3/2	Carmen Rd N Ahead	U	-	-	-	-	782	1940	1940	40.3%	-	-	-	0.3	1.6	11.7
4/1	Carmen Rd Departure	U	-	-	-	-	942	2080	2080	45.3%	-	-	-	0.4	1.6	0.4
4/2	Carmen Rd Departure	U	-	-	-	-	800	1940	1940	41.2%	-	-	-	0.4	1.6	0.4
5/1	Carmen Rd South Ahead	U	-	-	-	-	1378	1940	1940	71.0%	-	-	-	1.2	3.2	1.2
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	214	1940:1940	46+613	32.5 : 32.5%	199	0	0	1.3	21.9	4.2
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	733	1940	1940	37.8%	-	-	-	0.3	1.5	0.3
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	660	1940	1940	34.0%	-	-	-	0.3	1.4	0.3
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>18.1%</b>	<b>133</b>	<b>0</b>	<b>0</b>	<b>0.4</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	48	1940	1940	2.5%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	133	1940	734	18.1%	133	0	0	0.1	3.0	0.1
3/1	Mall Entry Left Ahead	U	-	-	-	-	305	2080	2080	14.7%	-	-	-	0.1	1.0	0.1
3/2	Mall Entry Ahead	U	-	-	-	-	122	1940	1940	6.3%	-	-	-	0.0	1.0	0.0
4/1	Mall Exit Ahead	U	-	-	-	-	341	2080	2080	16.4%	-	-	-	0.1	1.0	0.1
4/2	Mall Exit Ahead	U	-	-	-	-	171	1940	1940	8.8%	-	-	-	0.0	1.0	0.0
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%)		14.4		Total Delay for Signalled Lanes (pcuHr)		24.42		Cycle Time (s)		111				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%)		4.4		Total Delay for Signalled Lanes (pcuHr)		59.17		Cycle Time (s)		111				
		PRC Over All Lanes (%)		4.4		Total Delay Over All Lanes (pcuHr)		92.89								

Appendix A

**Network Summary**

Controller	Stream	PRC (%)	Total Delay for stream (pcuHr)
C1 - Mains S Rd / Chalmers St	1	14.37	24.42
C2 - Mains S Rd / Shands Rd	1	4.43	59.17
<b>Total Network Delay:</b> 92.89 pcuHr			
<b>Worst PRC:</b> 4.43 % (On Lane J2:7/1 in Stream 1)			
<b>Level Of Service:</b> D			

Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead	Inf	65.4 %	2080	2080
				Arm J1:8 Left	Inf	34.6 %		
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
				Arm J1:2 Left	Inf	27.0 %		
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:3 Ahead	Inf	73.0 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940



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Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead	Inf	100.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:8 Left	Inf	0.0 %		
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

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J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	14.9 % 85.1 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	15.7 % 84.3 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

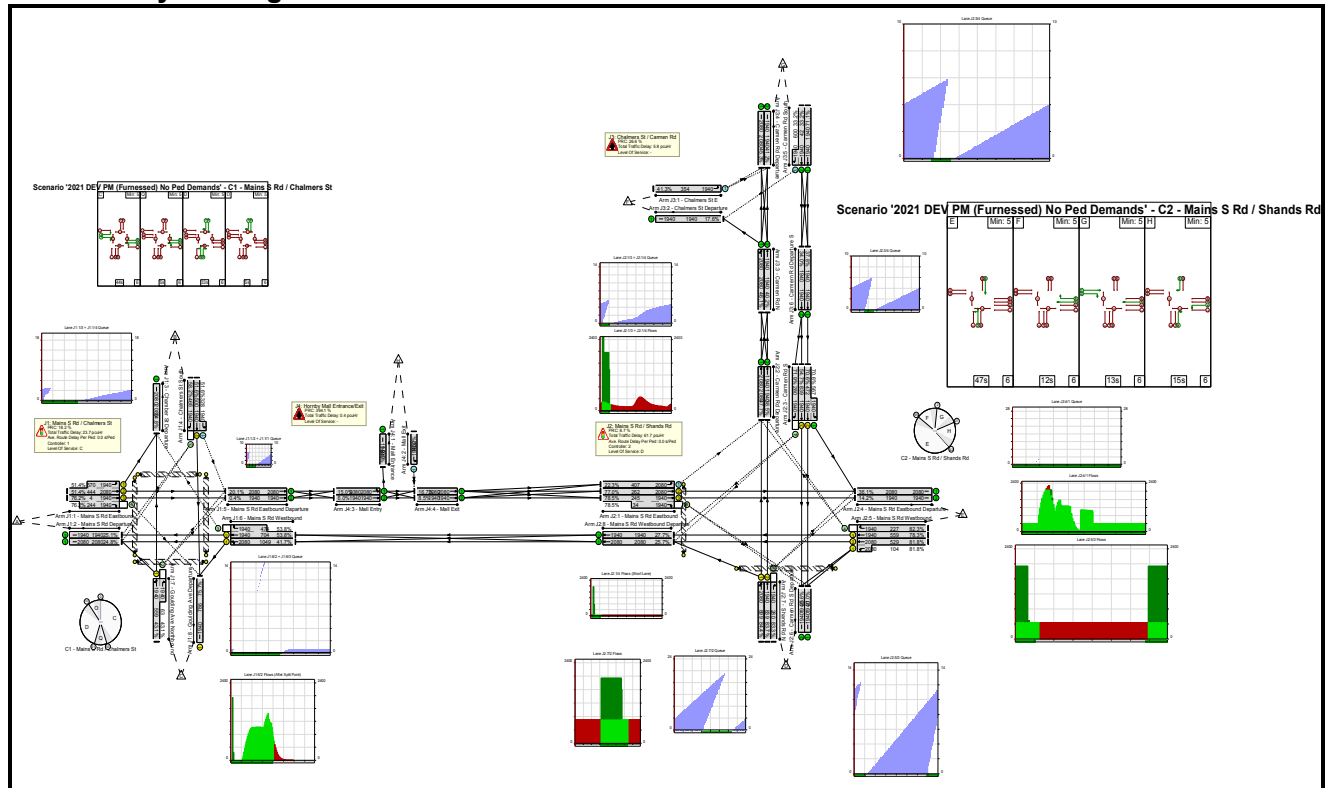
Appendix A

**Travel Time Matrix, Delay Per PCU  
Delay Per PCU :**

	A	B	C	D	E	F	G	H
A	0.0	33.5	113.7	0.0	101.4	0.0	61.9	29.6
B	42.4	0.0	49.7	0.0	81.3	0.0	0.0	0.0
C	43.8	44.0	0.0	0.0	98.5	0.0	55.9	45.1
D	0.0	0.0	0.0	0.0	82.6	47.6	48.1	0.0
E	56.3	56.5	88.5	56.7	0.0	92.8	93.2	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	29.4	0.0
G	89.4	0.0	122.1	34.9	14.8	24.4	0.0	0.0
H	0.0	0.0	0.0	70.0	73.1	0.0	23.6	0.0

**Scenario 6: '2021 DEV PM (Furnished) No Ped Demands' (FG4: '2021 Base + Dev PM', Plan 2: 'Plan 2 - No Ped Demands')**

**Network Layout Diagram**



Appendix A

**Network Results**

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	84.4%	1338	725	62	91.7	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	76.2%	782	75	51	23.7	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	44	0	521	2080:1940	444+570	51.4 : 51.4%	-	-	-	3.8	26.3	6.8
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	44	-	189	1940:1940	4+244	76.2 : 76.2%	142	0	44	3.1	58.8	5.4
2/1	Mains S Rd Departure	U	-		-	-	-	516	2080	2080	24.8%	-	-	-	0.2	1.2	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	486	1940	1940	25.1%	-	-	-	0.2	1.2	0.2
3/1	Chamber St Departure	U	-		-	-	-	724	2080	2080	34.8%	-	-	-	0.3	1.3	0.3
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	44	-	427	1940:1940	500+328	51.6 : 51.6%	145	24	0	2.7	22.7	8.8
4/3	Chalmers St South Right	O	C1:7		1	44	-	271	1940	466	58.2%	244	22	5	3.3	43.9	7.8
5/1	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	419	2080	2080	20.1%	-	-	-	0.1	1.1	0.1
5/2	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	8	1940	1940	0.4%	-	-	-	0.0	0.9	0.0
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	55	0	438	2080	1049	41.7%	-	-	-	0.8	6.9	1.4
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	55	-	634	1940:1940	704+474	53.8 : 53.8%	225	28	2	1.0	5.8	21.7

Appendix A

7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	33	0	268	1940:1940	559+63	43.1 : 43.1%	27	0	0	2.7	36.0	6.3
8/1	Goulding Ave Departure	U	C1:5		1	44	-	595	1940	786	75.7%	-	-	-	5.6	33.8	18.9
Ped Link: P1	Mains S Rd	-	C1:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Chalmers St Crossing	-	C1:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P4	Goulding Ave	-	C1:9		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>84.4%</b>	<b>77</b>	<b>651</b>	<b>11</b>	<b>61.7</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	91	2080	407	22.3%	50	41	0	0.4	17.2	1.8
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	13	-	202	2080	262	77.0%	-	-	-	4.1	72.4	7.6
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	13	-	219	1940:1940	245+34	78.5 : 78.5%	27	0	0	4.4	72.7	7.4
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	992	2080	2080	47.7%	-	-	-	0.5	1.9	8.7
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	747	1940	1940	38.5%	-	-	-	0.3	1.5	0.3
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	47	-	733	1940:1940	472+567	70.6 : 70.6%	-	-	-	3.5	17.2	12.1
3/3	Carmen Rd S Ahead	U	C2:6		1	47	-	459	1940	839	54.7%	-	-	-	3.6	28.1	11.1
3/4	Carmen Rd S Right	O	C2:8		1	15	-	201	1940	280	71.9%	0	197	4	3.8	67.5	7.1
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	751	2080	2080	36.1%	-	-	-	0.3	1.4	3.2

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4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	-	276	1940	1940	14.2%	-	-	-	0.1	1.1	0.1
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	31:15	0	518	2080:2080	529+104	81.8 : 81.8%	-	-	-	7.5	52.2	16.2
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	31	-	438	1940	559	78.3%	-	-	-	6.2	50.7	14.2
5/4	Mains S Rd Westbound Right	O	C2:5		1	12	-	187	1940	227	82.3%	0	184	3	4.6	88.4	7.7
6/1	Carmen Rd S Departure	U	-		-	-	-	407	1940	1940	21.0%	-	-	-	0.1	1.2	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	497	1940	1940	25.6%	-	-	-	0.2	1.2	0.2
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	47	0	759	2080	899	84.4%	-	-	-	8.5	40.5	23.5
7/2	Shands Rd N Ahead	U	C2:7		1	47	-	702	1940	839	83.7%	-	-	-	7.9	40.7	21.6
7/3	Shands Rd N Right	O	C2:9		1	15	-	233	1940	280	83.3%	0	229	4	5.3	81.4	9.2
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	534	2080	2080	25.7%	-	-	-	0.2	1.2	0.2
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	538	1940	1940	27.7%	-	-	-	0.2	1.3	0.2
Ped Link: P1	Shands Rd	-	C2:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Mains S Rd	-	C2:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>71.1%</b>	<b>345</b>	<b>0</b>	<b>0</b>	<b>5.9</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	146	1940	354	41.3%	146	0	0	1.2	28.8	3.4
2/1	Chalmers St Departure	U	-		-	-	-	342	1940	1940	17.6%	-	-	-	0.1	1.1	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	959	2080	2080	46.1%	-	-	-	0.4	1.6	0.4

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3/2	Carmen Rd N Ahead	U	-	-	-	-	780	1940	1940	40.2%	-	-	-	0.3	1.6	11.2
4/1	Carmen Rd Departure	U	-	-	-	-	942	2080	2080	45.3%	-	-	-	0.4	1.6	0.4
4/2	Carmen Rd Departure	U	-	-	-	-	800	1940	1940	41.2%	-	-	-	0.4	1.6	0.4
5/1	Carmen Rd South Ahead	U	-	-	-	-	1379	1940	1940	71.1%	-	-	-	1.2	3.2	1.2
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	213	1940:1940	42+600	33.2 : 33.2%	199	0	0	1.3	22.8	4.2
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	733	1940	1940	37.8%	-	-	-	0.3	1.5	0.3
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	660	1940	1940	34.0%	-	-	-	0.3	1.4	0.3
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>18.2%</b>	<b>133</b>	<b>0</b>	<b>0</b>	<b>0.4</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	48	1940	1940	2.5%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	133	1940	730	18.2%	133	0	0	0.1	3.0	0.1
3/1	Mall Entry Left Ahead	U	-	-	-	-	311	2080	2080	15.0%	-	-	-	0.1	1.0	0.1
3/2	Mall Entry Ahead	U	-	-	-	-	116	1940	1940	6.0%	-	-	-	0.0	1.0	0.0
4/1	Mall Exit Ahead	U	-	-	-	-	348	2080	2080	16.7%	-	-	-	0.1	1.0	0.1
4/2	Mall Exit Ahead	U	-	-	-	-	164	1940	1940	8.5%	-	-	-	0.0	1.0	0.0
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		18.2		Total Delay for Signalled Lanes (pcuHr):		23.00		Cycle Time (s):		111				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		6.7		Total Delay for Signalled Lanes (pcuHr):		59.36		Cycle Time (s):		111				
		PRC Over All Lanes (%):		6.7		Total Delay Over All Lanes(pcuHr):		91.73								

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**Network Summary**

Controller	Stream	PRC (%)	Total Delay for stream (pcuHr)
C1 - Mains S Rd / Chalmers St	1	18.18	23.00
C2 - Mains S Rd / Shands Rd	1	6.66	59.36
<b>Total Network Delay:</b> 91.73 pcuHr			
<b>Worst PRC:</b> 6.66 % (On Lane J2:7/1 in Stream 1)			
<b>Level Of Service:</b> D			



Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead	Inf	65.5 %	2080	2080
				Arm J1:8 Left	Inf	34.5 %		
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
				Arm J1:2 Left	Inf	27.0 %		
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:3 Ahead	Inf	73.0 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

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Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead	Inf	100.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:8 Left	Inf	0.0 %		
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

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J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	14.9 % 85.1 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

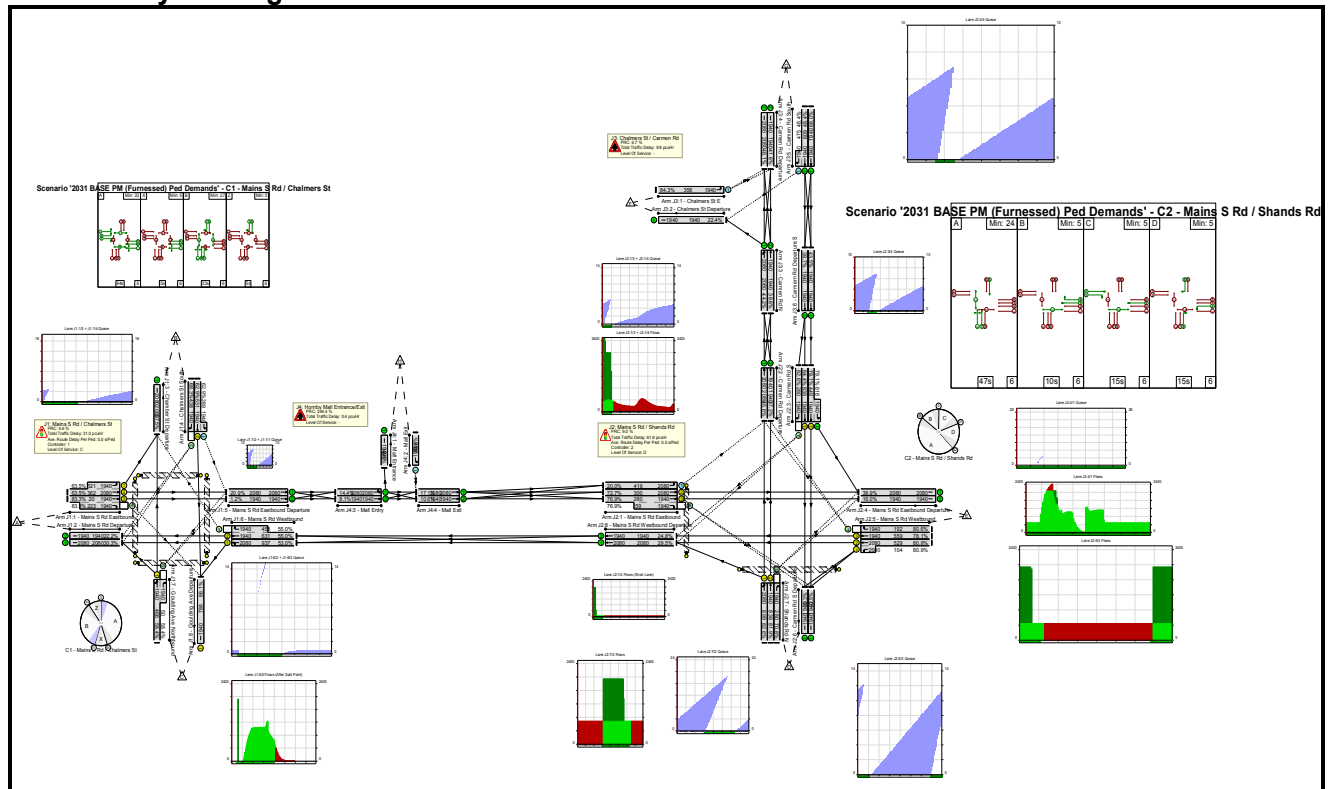
Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	15.4 % 84.6 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

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**Travel Time Matrix, Delay Per PCU  
Delay Per PCU :**

	A	B	C	D	E	F	G	H
A	0.0	28.1	111.5	0.0	105.3	0.0	58.1	28.7
B	45.1	0.0	49.7	0.0	89.2	0.0	0.0	0.0
C	36.7	36.9	0.0	0.0	105.4	0.0	53.8	42.9
D	0.0	0.0	0.0	0.0	82.6	45.0	45.5	0.0
E	58.2	58.5	90.2	58.6	0.0	92.8	93.2	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	30.4	0.0
G	85.6	0.0	117.4	33.9	14.2	25.2	0.0	0.0
H	0.0	0.0	0.0	76.8	80.4	0.0	23.3	0.0

**Scenario 7: '2031 BASE PM (Furnished) Ped Demands' (FG7: '2031 Base PM', Plan 1: 'Plan 1 - Ped Demands')  
Network Layout Diagram**



Appendix A

**Network Results**

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	86.1%	1407	875	62	103.1	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	86.1%	625	271	52	31.0	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	44:38	38	561	2080:1940	362+521	63.5 : 63.5%	-	-	-	4.9	31.2	9.0
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	44	-	203	1940:1940	20+223	83.3 : 83.3%	72	70	44	3.9	68.5	6.0
2/1	Mains S Rd Departure	U	-		-	-	-	631	2080	2080	30.3%	-	-	-	0.2	1.3	2.1
2/2	Mains S Rd Departure	U	-		-	-	-	430	1940	1940	22.2%	-	-	-	0.1	1.2	0.1
3/1	Chamber St Departure	U	-		-	-	-	780	2080	2080	37.5%	-	-	-	0.3	1.4	2.1
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	44	-	516	1940:1940	531+289	62.9 : 62.9%	156	26	0	3.9	27.2	12.3
4/3	Chalmers St South Right	O	C1:7		1	44	-	299	1940	438	68.3%	146	148	5	3.9	47.2	9.5
5/1	Mains S Rd Eastbound Departure Ahead	U	-		-	-	-	435	2080	2080	20.9%	-	-	-	0.1	1.1	0.1
5/2	Mains S Rd Eastbound Departure Ahead	U	-		-	-	-	23	1940	1940	1.2%	-	-	-	0.0	0.9	0.0
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	49	49	497	2080	937	53.0%	-	-	-	1.5	10.5	2.3
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	49	-	599	1940:1940	631+458	55.0 : 55.0%	223	27	2	1.0	6.3	20.6

Appendix A

7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	27:33	27	301	1940:1940	466+50	58.4 : 58.4%	29	0	0	3.7	44.8	8.2
8/1	Goulding Ave Departure	U	C1:5		1	44	-	677	1940	786	86.1%	-	-	-	7.4	39.4	23.1
Ped Link: P1	Mains S Rd	-	C1:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Chalmers St Crossing	-	C1:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Goulding Ave	-	C1:9		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>82.6%</b>	<b>98</b>	<b>604</b>	<b>11</b>	<b>61.9</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	84	2080	419	20.0%	53	31	0	0.4	16.0	1.6
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	15	-	218	2080	300	72.7%	-	-	-	3.9	65.0	7.7
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	15	-	260	1940:1940	280+59	76.9 : 76.9%	45	0	0	4.7	65.4	7.8
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	948	2080	2080	45.6%	-	-	-	0.5	1.8	8.1
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	721	1940	1940	37.2%	-	-	-	0.3	1.5	0.3
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	47	-	844	1940:1940	449+618	79.1 : 79.1%	-	-	-	4.6	19.5	15.8
3/3	Carmen Rd S Ahead	U	C2:6		1	47	-	540	1940	839	64.4%	-	-	-	4.6	30.6	13.9
3/4	Carmen Rd S Right	O	C2:8		1	15	-	231	1940	280	82.6%	0	227	4	5.1	80.1	9.0
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	809	2080	2080	38.9%	-	-	-	0.3	1.5	5.0

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4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	-	311	1940	1940	16.0%	-	-	-	0.1	1.1	0.1
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	31:15	0	512	2080:2080	529+104	80.9 : 80.9%	-	-	-	7.3	51.4	15.9
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	31	-	437	1940	559	78.1%	-	-	-	6.1	50.6	14.0
5/4	Mains S Rd Westbound Right	O	C2:5		1	10	-	155	1940	192	80.6%	0	152	3	4.0	92.8	6.5
6/1	Carmen Rd S Departure	U	-		-	-	-	437	1940	1940	22.5%	-	-	-	0.1	1.2	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	587	1940	1940	30.3%	-	-	-	0.2	1.3	0.2
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	47	41	743	2080	899	82.6%	-	-	-	8.0	39.0	22.5
7/2	Shands Rd N Ahead	U	C2:7		1	47	-	687	1940	839	81.9%	-	-	-	7.5	39.2	20.7
7/3	Shands Rd N Right	O	C2:9		1	15	-	198	1940	280	70.8%	0	194	4	3.7	66.7	7.0
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	614	2080	2080	29.5%	-	-	-	0.2	1.2	1.4
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	482	1940	1940	24.8%	-	-	-	0.2	1.2	0.2
Ped Link: P1	Shands Rd	-	C2:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Mains S Rd	-	C2:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>84.3%</b>	<b>530</b>	<b>0</b>	<b>0</b>	<b>9.8</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	300	1940	356	84.3%	300	0	0	4.6	55.1	10.5
2/1	Chalmers St Departure	U	-		-	-	-	434	1940	1940	22.4%	-	-	-	0.1	1.2	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	920	2080	2080	44.2%	-	-	-	0.4	1.6	0.4

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3/2	Carmen Rd N Ahead	U	-	-	-	-	749	1940	1940	38.6%	-	-	-	0.3	1.6	11.6
4/1	Carmen Rd Departure	U	-	-	-	-	958	2080	2080	46.1%	-	-	-	0.4	1.6	0.4
4/2	Carmen Rd Departure	U	-	-	-	-	807	1940	1940	41.6%	-	-	-	0.4	1.6	6.8
5/1	Carmen Rd South Ahead	U	-	-	-	-	1320	1940	1940	68.0%	-	-	-	1.1	2.9	1.1
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	525	1940:1940	609+475	48.4 : 48.4%	230	0	0	1.7	11.9	5.7
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	844	1940	1940	43.5%	-	-	-	0.4	1.6	0.4
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	771	1940	1940	39.7%	-	-	-	0.3	1.5	0.3
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>20.3%</b>	<b>153</b>	<b>0</b>	<b>0</b>	<b>0.4</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	49	1940	1940	2.5%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	153	1940	756	20.3%	153	0	0	0.1	3.0	0.1
3/1	Mall Entry Left Ahead	U	-	-	-	-	300	2080	2080	14.4%	-	-	-	0.1	1.0	0.1
3/2	Mall Entry Ahead	U	-	-	-	-	158	1940	1940	8.1%	-	-	-	0.0	1.0	0.0
4/1	Mall Exit Ahead	U	-	-	-	-	356	2080	2080	17.1%	-	-	-	0.1	1.0	0.1
4/2	Mall Exit Ahead	U	-	-	-	-	206	1940	1940	10.6%	-	-	-	0.1	1.0	0.1
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		4.6		Total Delay for Signalled Lanes (pcuHr):		30.21		Cycle Time (s):		111				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		9.0		Total Delay for Signalled Lanes (pcuHr):		59.62		Cycle Time (s):		111				
		PRC Over All Lanes (%):		4.6		Total Delay Over All Lanes(pcuHr):		103.13								



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**Network Summary**

Controller	Stream	PRC (%)	Total Delay for stream (pcuHr)
C1 - Mains S Rd / Chalmers St	1	4.56	30.21
C2 - Mains S Rd / Shands Rd	1	8.95	59.62
<b>Total Network Delay:</b> 103.13 pcuHr			
<b>Worst PRC:</b> 4.56 % (On Lane J1:8/1 in Stream 1)			
<b>Level Of Service:</b> D			

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**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead	Inf	68.4 %	2080	2080
				Arm J1:8 Left	Inf	31.6 %		
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
				Arm J1:2 Left	Inf	27.6 %		
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:3 Ahead	Inf	72.4 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

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Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead	Inf	100.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:8 Left	Inf	0.0 %		
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

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J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	22.2 % 77.8 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	16.3 % 83.7 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940



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**Network Results**

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	86.1%	1545	738	61	101.9	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	86.1%	764	133	51	29.8	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	44	0	422	2080:1940	189+688	48.1 : 48.1%	-	-	-	3.2	26.9	7.7
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	44	-	342	1940:1940	189+226	82.5 : 82.5%	143	0	43	4.8	50.2	6.2
2/1	Mains S Rd Departure	U	-		-	-	-	734	2080	2080	35.3%	-	-	-	0.3	1.3	0.3
2/2	Mains S Rd Departure	U	-		-	-	-	327	1940	1940	16.9%	-	-	-	0.1	1.1	0.1
3/1	Chamber St Departure	U	-		-	-	-	780	2080	2080	37.5%	-	-	-	0.3	1.4	2.6
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	44	-	516	1940:1940	531+289	62.9 : 62.9%	156	26	0	3.9	27.2	12.3
4/3	Chalmers St South Right	O	C1:7		1	44	-	299	1940	439	68.0%	217	76	5	4.2	50.3	9.4
5/1	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	295	2080	2080	14.2%	-	-	-	0.1	1.0	0.1
5/2	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	163	1940	1940	8.4%	-	-	-	0.0	1.0	0.0
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	55	0	537	2080	1049	51.2%	-	-	-	1.7	11.2	3.0
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	55	-	559	1940:1940	670+550	45.8 : 45.8%	218	31	3	0.8	5.0	19.9

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7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	33	0	301	1940:1940	561+60	48.5 : 48.5%	29	0	0	3.1	37.6	7.4
8/1	Goulding Ave Departure	U	C1:5		1	44	-	677	1940	786	86.1%	-	-	-	7.4	39.3	23.1
Ped Link: P1	Mains S Rd	-	C1:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Chalmers St Crossing	-	C1:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P4	Goulding Ave	-	C1:9		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>82.6%</b>	<b>98</b>	<b>604</b>	<b>11</b>	<b>61.9</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	84	2080	419	20.0%	53	31	0	0.4	16.8	1.6
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	15	-	221	2080	300	73.7%	-	-	-	4.0	65.4	7.8
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	15	-	257	1940:1940	280+59	75.8 : 75.8%	45	0	0	4.6	64.7	7.7
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	950	2080	2080	45.7%	-	-	-	0.5	1.8	8.0
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	719	1940	1940	37.1%	-	-	-	0.3	1.5	0.3
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	47	-	844	1940:1940	449+618	79.1 : 79.1%	-	-	-	4.6	19.5	15.8
3/3	Carmen Rd S Ahead	U	C2:6		1	47	-	540	1940	839	64.4%	-	-	-	4.6	30.6	13.9
3/4	Carmen Rd S Right	O	C2:8		1	15	-	231	1940	280	82.6%	0	227	4	5.1	80.1	9.0
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	821	2080	2080	39.5%	-	-	-	0.3	1.5	5.1

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4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	-	299	1940	1940	15.4%	-	-	-	0.1	1.1	0.1
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	31:15	0	512	2080:2080	529+104	80.9 : 80.9%	-	-	-	7.3	51.4	15.9
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	31	-	437	1940	559	78.1%	-	-	-	6.1	50.6	14.0
5/4	Mains S Rd Westbound Right	O	C2:5		1	10	-	155	1940	192	80.6%	0	152	3	4.0	92.8	6.5
6/1	Carmen Rd S Departure	U	-		-	-	-	431	1940	1940	22.2%	-	-	-	0.1	1.2	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	593	1940	1940	30.6%	-	-	-	0.2	1.3	0.2
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	47	0	740	2080	899	82.3%	-	-	-	8.0	38.7	22.2
7/2	Shands Rd N Ahead	U	C2:7		1	47	-	690	1940	839	82.2%	-	-	-	7.6	39.5	20.8
7/3	Shands Rd N Right	O	C2:9		1	15	-	198	1940	280	70.8%	0	194	4	3.7	66.7	7.0
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	637	2080	2080	30.6%	-	-	-	0.2	1.3	6.1
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	459	1940	1940	23.7%	-	-	-	0.2	1.2	0.2
Ped Link: P1	Shands Rd	-	C2:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Mains S Rd	-	C2:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>84.2%</b>	<b>530</b>	<b>0</b>	<b>0</b>	<b>9.7</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	300	1940	356	84.2%	300	0	0	4.6	54.9	10.4
2/1	Chalmers St Departure	U	-		-	-	-	434	1940	1940	22.4%	-	-	-	0.1	1.2	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	907	2080	2080	43.6%	-	-	-	0.4	1.5	0.4



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3/2	Carmen Rd N Ahead	U	-	-	-	-	762	1940	1940	39.3%	-	-	-	0.4	1.7	14.4	
4/1	Carmen Rd Departure	U	-	-	-	-	951	2080	2080	45.7%	-	-	-	0.4	1.6	0.4	
4/2	Carmen Rd Departure	U	-	-	-	-	814	1940	1940	42.0%	-	-	-	0.4	1.6	5.8	
5/1	Carmen Rd South Ahead	U	-	-	-	-	1299	1940	1940	67.0%	-	-	-	1.0	2.8	1.0	
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	546	1940:1940	633+461	49.9 : 49.9%	230	0	0	1.8	11.6	5.8	
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	844	1940	1940	43.5%	-	-	-	0.4	1.6	0.4	
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	771	1940	1940	39.7%	-	-	-	0.3	1.5	0.3	
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>20.9%</b>	<b>153</b>	<b>0</b>	<b>0</b>	<b>0.4</b>	-	-	
1/1	Mall Entrance	U	-	-	-	-	49	1940	1940	2.5%	-	-	-	0.0	1.0	0.0	
2/1	Mall Exit Left	O	-	-	-	-	153	1940	733	20.9%	153	0	0	0.1	3.1	0.1	
3/1	Mall Entry Left Ahead	U	-	-	-	-	290	2080	2080	13.9%	-	-	-	0.1	1.0	0.1	
3/2	Mall Entry Ahead	U	-	-	-	-	168	1940	1940	8.7%	-	-	-	0.0	1.0	0.0	
4/1	Mall Exit Ahead	U	-	-	-	-	344	2080	2080	16.5%	-	-	-	0.1	1.0	0.1	
4/2	Mall Exit Ahead	U	-	-	-	-	218	1940	1940	11.2%	-	-	-	0.1	1.0	0.1	
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		4.6		Total Delay for Signalled Lanes (pcuHr):		28.97		Cycle Time (s):		111					
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		9.0		Total Delay for Signalled Lanes (pcuHr):		59.59		Cycle Time (s):		111					
		PRC Over All Lanes (%):		4.6		Total Delay Over All Lanes(pcuHr):		101.88									

Appendix A

**Network Summary**

Controller	Stream	PRC (%)	Total Delay for stream (pcuHr)
C1 - Mains S Rd / Chalmers St	1	4.56	28.97
C2 - Mains S Rd / Shands Rd	1	8.95	59.59
<b>Total Network Delay:</b> 101.88 pcuHr			
<b>Worst PRC:</b> 4.56 % (On Lane J1:8/1 in Stream 1)			
<b>Level Of Service:</b> D			

Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead	Inf	70.8 %	2080	2080
				Arm J1:8 Left	Inf	29.2 %		
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
				Arm J1:2 Left	Inf	27.6 %		
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:3 Ahead	Inf	72.4 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

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Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead	Inf	100.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:8 Left	Inf	0.0 %		
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

## Appendix A

J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	22.5 % 77.5 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	16.9 % 83.1 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

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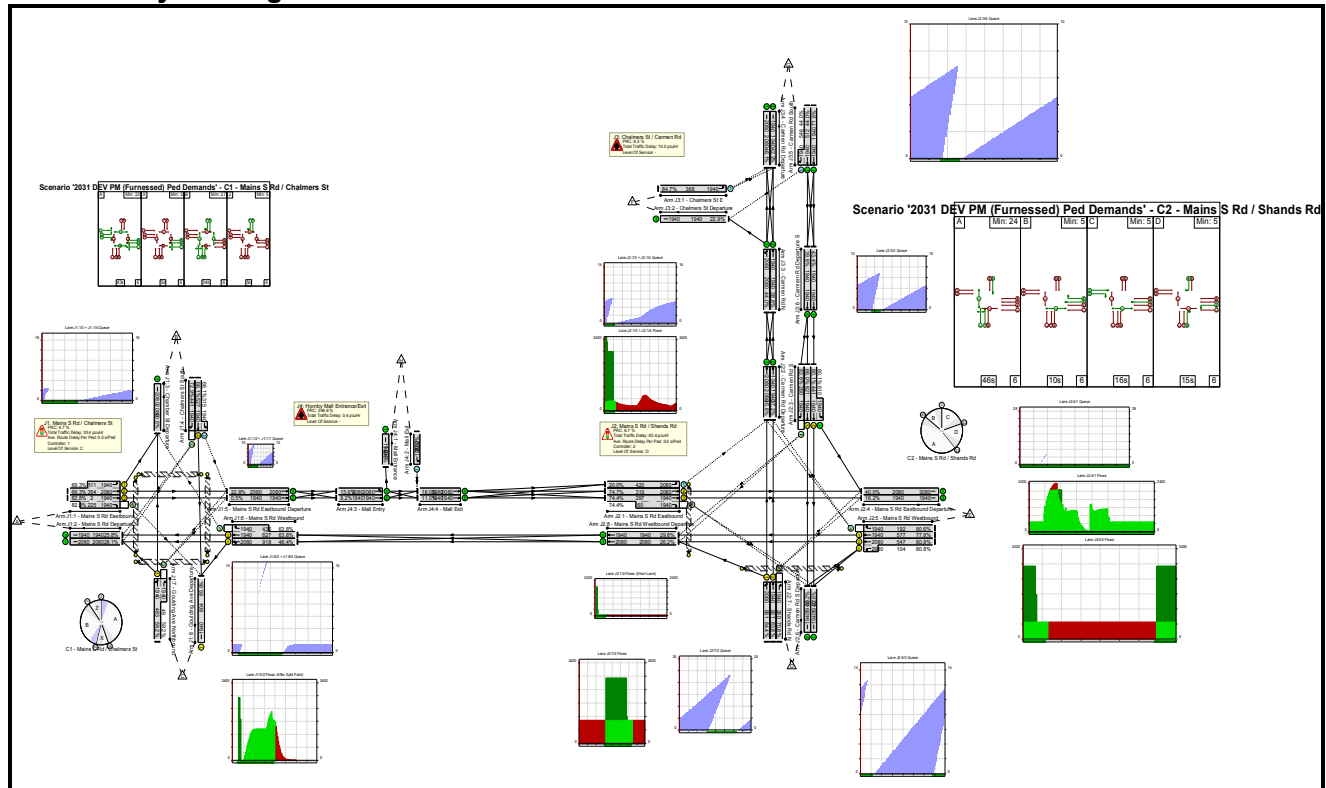
**Travel Time Matrix, Delay Per PCU**

**Delay Per PCU :**

	A	B	C	D	E	F	G	H
A	0.0	29.0	112.9	0.0	113.8	0.0	60.6	31.1
B	51.6	0.0	59.6	83.1	85.3	0.0	0.0	0.0
C	38.0	38.1	0.0	0.0	121.1	0.0	59.4	48.7
D	0.0	0.0	0.0	0.0	68.0	43.5	44.0	0.0
E	57.9	57.7	97.5	58.0	0.0	97.2	97.5	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	56.4	0.0
G	106.4	0.0	146.2	36.6	17.3	23.7	0.0	0.0
H	0.0	0.0	0.0	68.6	72.3	0.0	22.5	0.0

**Scenario 9: '2031 DEV PM (Furnished) Ped Demands' (FG8: '2031 Base + Dev PM', Plan 1: 'Plan 1 - Ped Demands')**

**Network Layout Diagram**



Appendix A

**Network Results**

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	<b>85.9%</b>	<b>1465</b>	<b>915</b>	<b>62</b>	<b>107.2</b>	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	<b>85.9%</b>	<b>666</b>	<b>306</b>	<b>51</b>	<b>33.4</b>	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	43:37	37	599	2080:1940	354+511	69.3 : 69.3%	-	-	-	5.6	33.6	10.6
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	43	-	188	1940:1940	2+225	82.8 : 82.8%	74	70	42	3.7	71.3	6.0
2/1	Mains S Rd Departure	U	-		-	-	-	584	2080	2080	28.1%	-	-	-	0.2	1.2	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	500	1940	1940	25.8%	-	-	-	0.2	1.2	0.2
3/1	Chamber St Departure	U	-		-	-	-	843	2080	2080	40.5%	-	-	-	0.4	1.5	6.8
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	45	-	556	1940:1940	527+315	66.1 : 66.1%	178	30	0	4.2	27.4	13.4
4/3	Chalmers St South Right	O	C1:7		1	45	-	322	1940	441	72.9%	149	167	6	4.4	49.7	10.4
5/1	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	475	2080	2080	22.8%	-	-	-	0.1	1.1	0.1
5/2	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	9	1940	1940	0.5%	-	-	-	0.0	0.9	0.0
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	48	48	444	2080	918	48.4%	-	-	-	1.3	10.8	2.1
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	48	-	678	1940:1940	627+436	63.8 : 63.8%	236	39	3	1.9	9.9	23.1

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7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	28:34	28	315	1940:1940	483+49	59.2 : 59.2%	29	0	0	3.8	43.9	8.6
8/1	Goulding Ave Departure	U	C1:5		1	45	-	691	1940	804	85.9%	-	-	-	7.5	38.8	23.4
Ped Link: P1	Mains S Rd	-	C1:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Chalmers St Crossing	-	C1:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Goulding Ave	-	C1:9		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>84.4%</b>	<b>93</b>	<b>610</b>	<b>11</b>	<b>63.4</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	84	2080	420	20.0%	48	36	0	0.4	16.4	1.6
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	16	-	238	2080	319	74.7%	-	-	-	4.2	63.0	8.2
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	16	-	266	1940:1940	297+60	74.4 : 74.4%	45	0	0	4.5	61.5	7.8
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	948	2080	2080	45.6%	-	-	-	0.5	1.8	8.6
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	721	1940	1940	37.2%	-	-	-	0.3	1.5	0.3
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	46	-	842	1940:1940	441+610	80.1 : 80.1%	-	-	-	4.7	20.2	16.0
3/3	Carmen Rd S Ahead	U	C2:6		1	46	-	542	1940	821	66.0%	-	-	-	4.8	32.0	14.2
3/4	Carmen Rd S Right	O	C2:8		1	15	-	231	1940	280	82.6%	0	227	4	5.1	80.3	9.0
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	831	2080	2080	40.0%	-	-	-	0.4	1.5	6.1



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4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	-	315	1940	1940	16.2%	-	-	-	0.1	1.1	0.1
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	32:15	0	526	2080:2080	547+104	80.8 : 80.8%	-	-	-	7.4	50.4	16.3
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	32	-	449	1940	577	77.8%	-	-	-	6.2	49.4	14.3
5/4	Mains S Rd Westbound Right	O	C2:5		1	10	-	155	1940	192	80.6%	0	152	3	4.0	92.8	6.5
6/1	Carmen Rd S Departure	U	-		-	-	-	438	1940	1940	22.6%	-	-	-	0.1	1.2	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	586	1940	1940	30.2%	-	-	-	0.2	1.3	0.2
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	46	40	743	2080	881	84.4%	-	-	-	8.5	41.3	23.0
7/2	Shands Rd N Ahead	U	C2:7		1	46	-	687	1940	821	83.6%	-	-	-	7.9	41.5	21.4
7/3	Shands Rd N Right	O	C2:9		1	15	-	198	1940	280	70.8%	0	194	4	3.7	66.7	7.0
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	544	2080	2080	26.2%	-	-	-	0.2	1.2	0.2
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	578	1940	1940	29.8%	-	-	-	0.2	1.3	0.2
Ped Link: P1	Shands Rd	-	C2:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Mains S Rd	-	C2:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>84.7%</b>	<b>553</b>	<b>0</b>	<b>0</b>	<b>10.0</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	312	1940	368	84.7%	312	0	0	4.7	54.4	10.9
2/1	Chalmers St Departure	U	-		-	-	-	445	1940	1940	22.9%	-	-	-	0.1	1.2	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	916	2080	2080	44.0%	-	-	-	0.4	1.5	0.4

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3/2	Carmen Rd N Ahead	U	-	-	-	-	753	1940	1940	38.8%	-	-	-	0.3	1.5	10.0	
4/1	Carmen Rd Departure	U	-	-	-	-	959	2080	2080	46.1%	-	-	-	0.4	1.6	0.4	
4/2	Carmen Rd Departure	U	-	-	-	-	818	1940	1940	42.2%	-	-	-	0.4	1.6	5.8	
5/1	Carmen Rd South Ahead	U	-	-	-	-	1390	1940	1940	71.6%	-	-	-	1.3	3.3	1.3	
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	466	1940:1940	512+548	44.0 : 44.0%	241	0	0	1.7	13.0	5.6	
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	842	1940	1940	43.4%	-	-	-	0.4	1.6	0.4	
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	773	1940	1940	39.8%	-	-	-	0.3	1.5	0.3	
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>20.2%</b>	<b>153</b>	<b>0</b>	<b>0</b>	<b>0.4</b>	-	-	
1/1	Mall Entrance	U	-	-	-	-	49	1940	1940	2.5%	-	-	-	0.0	1.0	0.0	
2/1	Mall Exit Left	O	-	-	-	-	153	1940	759	20.2%	153	0	0	0.1	3.0	0.1	
3/1	Mall Entry Left Ahead	U	-	-	-	-	324	2080	2080	15.6%	-	-	-	0.1	1.0	0.1	
3/2	Mall Entry Ahead	U	-	-	-	-	160	1940	1940	8.2%	-	-	-	0.0	1.0	0.0	
4/1	Mall Exit Ahead	U	-	-	-	-	375	2080	2080	18.0%	-	-	-	0.1	1.1	0.1	
4/2	Mall Exit Ahead	U	-	-	-	-	213	1940	1940	11.0%	-	-	-	0.1	1.0	0.1	
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		4.7		Total Delay for Signalled Lanes (pcuHr):		32.48		Cycle Time (s):		111					
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		6.7		Total Delay for Signalled Lanes (pcuHr):		61.05		Cycle Time (s):		111					
		PRC Over All Lanes (%):		4.7		Total Delay Over All Lanes(pcuHr):		107.23									

Appendix A

**Network Summary**

Controller	Stream	PRC (%)	Total Delay for stream (pcuHr)
C1 - Mains S Rd / Chalmers St	1	4.71	32.48
C2 - Mains S Rd / Shands Rd	1	6.68	61.05
<b>Total Network Delay:</b> 107.23 pcuHr			
<b>Worst PRC:</b> 4.71 % (On Lane J1:8/1 in Stream 1)			
<b>Level Of Service:</b> D			

## Appendix A

## Lane Saturation Flows

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead	Inf	64.6 %	2080	2080
				Arm J1:8 Left	Inf	35.4 %		
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
				Arm J1:2 Left	Inf	26.2 %		
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:3 Ahead	Inf	73.8 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

Appendix A

Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead	Inf	100.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:8 Left	Inf	0.0 %		
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

## Appendix A

J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	22.3 % 77.7 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	15.1 % 84.9 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

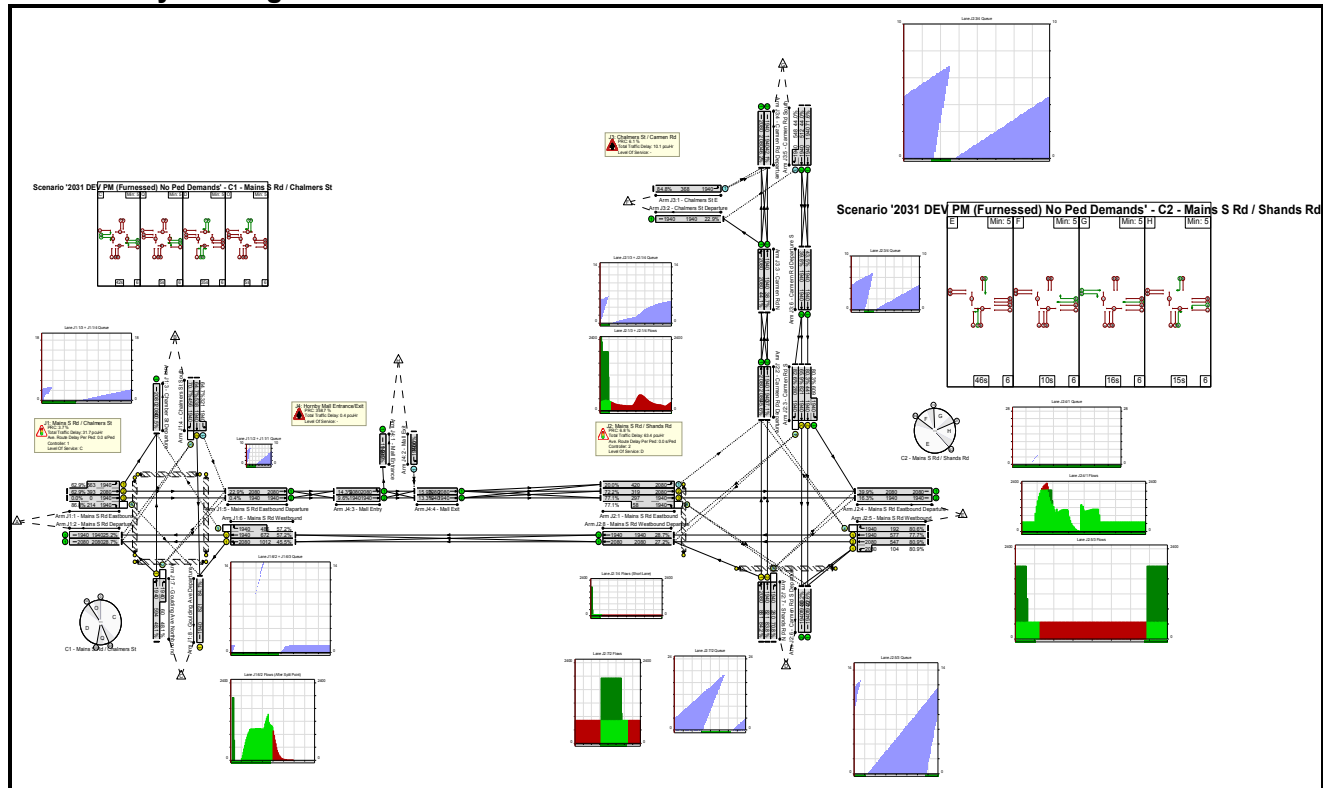
Appendix A

**Travel Time Matrix, Delay Per PCU  
Delay Per PCU :**

	A	B	C	D	E	F	G	H
A	0.0	37.6	130.4	0.0	99.6	0.0	62.6	33.1
B	51.0	0.0	59.0	81.9	84.9	0.0	0.0	0.0
C	45.0	45.2	0.0	0.0	109.4	0.0	59.2	48.6
D	0.0	0.0	0.0	0.0	68.0	45.8	46.2	0.0
E	58.4	59.0	96.6	57.5	0.0	97.2	97.5	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	56.0	0.0
G	110.9	0.0	151.5	38.1	18.3	23.0	0.0	0.0
H	0.0	0.0	0.0	65.5	70.3	0.0	22.4	0.0

**Scenario 10: '2031 DEV PM (Furnished) No Ped Demands' (FG8: '2031 Base + Dev PM', Plan 2: 'Plan 2 - No Ped Demands')**

**Network Layout Diagram**



Appendix A

**Network Results**

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	86.8%	1618	762	62	105.7	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	86.8%	819	153	51	31.7	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	42	0	601	2080:1940	393+563	62.9 : 62.9%	-	-	-	5.0	29.8	9.1
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	42	-	186	1940:1940	0+214	0.0 : 86.8%	144	0	42	4.4	85.3	6.8
2/1	Mains S Rd Departure	U	-		-	-	-	596	2080	2080	28.7%	-	-	-	0.2	1.2	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	488	1940	1940	25.2%	-	-	-	0.2	1.2	0.2
3/1	Chamber St Departure	U	-		-	-	-	843	2080	2080	40.5%	-	-	-	0.3	1.5	2.2
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	46	-	556	1940:1940	538+321	64.7 : 64.7%	178	30	0	4.1	26.3	13.1
4/3	Chalmers St South Right	O	C1:7		1	46	-	322	1940	456	70.7%	234	83	6	4.5	50.3	10.2
5/1	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	477	2080	2080	22.9%	-	-	-	0.1	1.1	0.1
5/2	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	7	1940	1940	0.4%	-	-	-	0.0	0.9	0.0
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	53	0	460	2080	1012	45.5%	-	-	-	1.3	10.3	2.3
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	53	-	662	1940:1940	672+486	57.2 : 57.2%	235	40	3	1.5	8.2	22.3



Appendix A

7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	35	0	315	1940:1940	594+60	48.1 : 48.1%	29	0	0	3.1	35.6	7.5
8/1	Goulding Ave Departure	U	C1:5		1	46	-	691	1940	821	84.1%	-	-	-	7.0	36.5	22.9
Ped Link: P1	Mains S Rd	-	C1:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Chalmers St Crossing	-	C1:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P4	Goulding Ave	-	C1:9		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>84.2%</b>	<b>93</b>	<b>610</b>	<b>11</b>	<b>63.4</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	84	2080	420	20.0%	48	36	0	0.4	16.2	1.6
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	16	-	230	2080	319	72.2%	-	-	-	3.9	61.1	7.8
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	16	-	274	1940:1940	297+58	77.1 : 77.1%	45	0	0	4.8	63.6	8.3
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	949	2080	2080	45.6%	-	-	-	0.5	1.8	8.6
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	720	1940	1940	37.1%	-	-	-	0.3	1.5	0.3
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	46	-	843	1940:1940	441+609	80.3 : 80.3%	-	-	-	4.8	20.4	16.0
3/3	Carmen Rd S Ahead	U	C2:6		1	46	-	541	1940	821	65.9%	-	-	-	4.8	31.9	14.2
3/4	Carmen Rd S Right	O	C2:8		1	15	-	231	1940	280	82.6%	0	227	4	5.1	80.1	9.0
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	829	2080	2080	39.9%	-	-	-	0.3	1.5	5.6

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4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	-	317	1940	1940	16.3%	-	-	-	0.1	1.1	0.1
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	32:15	0	527	2080:2080	547+104	80.9 : 80.9%	-	-	-	7.4	50.6	16.3
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	32	-	448	1940	577	77.7%	-	-	-	6.1	49.3	14.3
5/4	Mains S Rd Westbound Right	O	C2:5		1	10	-	155	1940	192	80.6%	0	152	3	4.0	92.8	6.5
6/1	Carmen Rd S Departure	U	-		-	-	-	438	1940	1940	22.6%	-	-	-	0.1	1.2	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	586	1940	1940	30.2%	-	-	-	0.2	1.3	0.2
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	46	0	742	2080	881	84.2%	-	-	-	8.5	41.2	23.0
7/2	Shands Rd N Ahead	U	C2:7		1	46	-	688	1940	821	83.8%	-	-	-	7.9	41.6	21.4
7/3	Shands Rd N Right	O	C2:9		1	15	-	198	1940	280	70.8%	0	194	4	3.7	66.7	7.0
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	566	2080	2080	27.2%	-	-	-	0.2	1.2	0.2
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	556	1940	1940	28.7%	-	-	-	0.2	1.3	0.2
Ped Link: P1	Shands Rd	-	C2:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Mains S Rd	-	C2:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>84.8%</b>	<b>553</b>	<b>0</b>	<b>0</b>	<b>10.1</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	312	1940	368	84.8%	312	0	0	4.7	54.6	10.9
2/1	Chalmers St Departure	U	-		-	-	-	445	1940	1940	22.9%	-	-	-	0.1	1.2	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	918	2080	2080	44.1%	-	-	-	0.4	1.5	0.4

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3/2	Carmen Rd N Ahead	U	-	-	-	-	751	1940	1940	38.7%	-	-	-	0.3	1.5	10.1
4/1	Carmen Rd Departure	U	-	-	-	-	960	2080	2080	46.2%	-	-	-	0.4	1.6	0.4
4/2	Carmen Rd Departure	U	-	-	-	-	817	1940	1940	42.1%	-	-	-	0.4	1.6	5.8
5/1	Carmen Rd South Ahead	U	-	-	-	-	1390	1940	1940	71.6%	-	-	-	1.3	3.3	1.3
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	466	1940:1940	512+548	44.0 : 44.0%	241	0	0	1.7	13.0	5.6
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	843	1940	1940	43.5%	-	-	-	0.4	1.6	0.4
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	772	1940	1940	39.8%	-	-	-	0.3	1.5	0.3
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>19.6%</b>	<b>153</b>	<b>0</b>	<b>0</b>	<b>0.4</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	49	1940	1940	2.5%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	153	1940	780	19.6%	153	0	0	0.1	2.9	0.1
3/1	Mall Entry Left Ahead	U	-	-	-	-	298	2080	2080	14.3%	-	-	-	0.1	1.0	0.1
3/2	Mall Entry Ahead	U	-	-	-	-	186	1940	1940	9.6%	-	-	-	0.1	1.0	0.1
4/1	Mall Exit Ahead	U	-	-	-	-	330	2080	2080	15.9%	-	-	-	0.1	1.0	0.1
4/2	Mall Exit Ahead	U	-	-	-	-	258	1940	1940	13.3%	-	-	-	0.1	1.1	0.1
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		3.7		Total Delay for Signalled Lanes (pcuHr):		30.88		Cycle Time (s):		111				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		6.8		Total Delay for Signalled Lanes (pcuHr):		61.10		Cycle Time (s):		111				
		PRC Over All Lanes (%):		3.7		Total Delay Over All Lanes(pcuHr):		105.68								

## Appendix A

**Network Summary**

<b>Controller</b>	<b>Stream</b>	<b>PRC (%)</b>	<b>Total Delay for stream (pcuHr)</b>
C1 - Mains S Rd / Chalmers St	1	3.70	30.88
C2 - Mains S Rd / Shands Rd	1	6.83	61.10
<b>Total Network Delay:</b> 105.68 pcuHr			
<b>Worst PRC:</b> 3.70 % (On Lane J1:1/3 in Stream 1)			
<b>Level Of Service:</b> D			

Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	0.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead	Inf	65.9 %	2080	2080
				Arm J1:8 Left	Inf	34.1 %		
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
				Arm J1:2 Left	Inf	26.2 %		
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:3 Ahead	Inf	73.8 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

Appendix A

Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead	Inf	100.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:8 Left	Inf	0.0 %		
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

Appendix A

J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	22.2 % 77.8 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

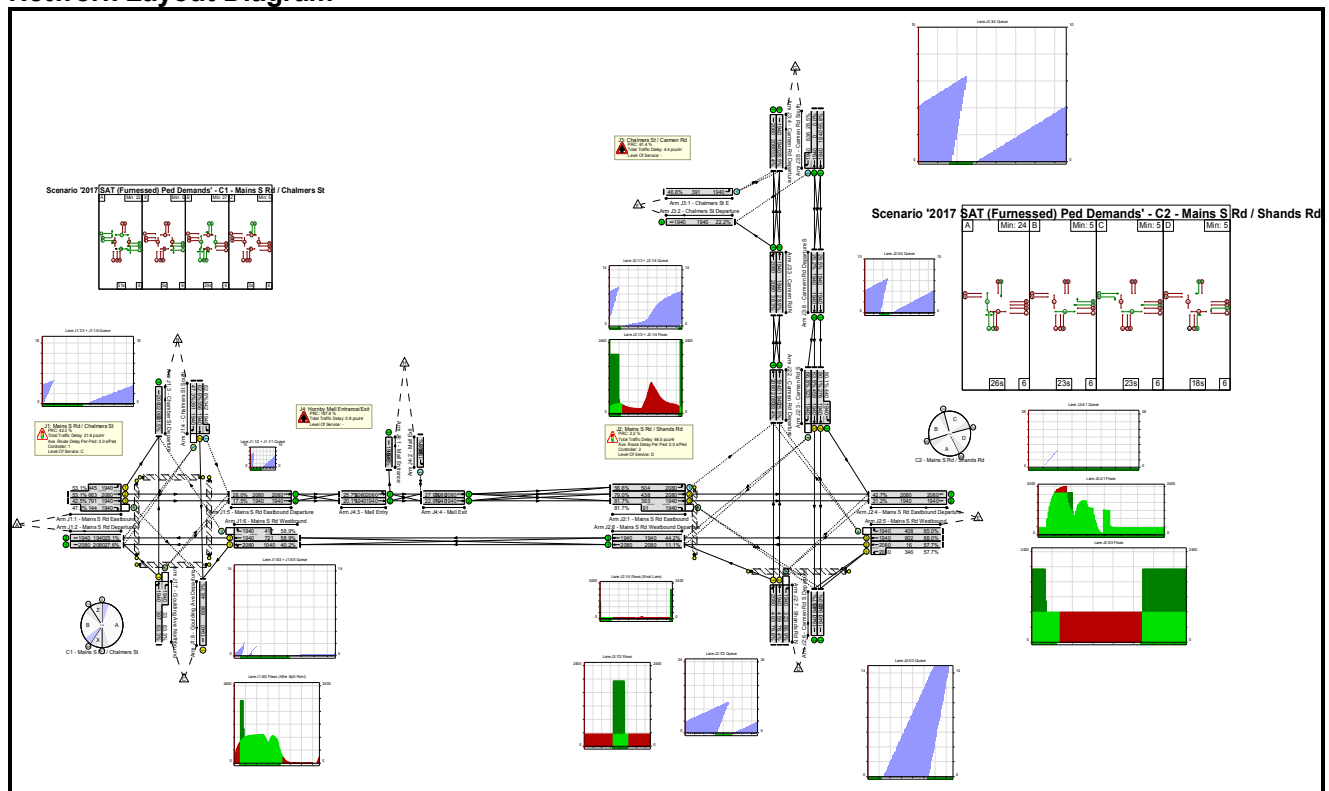
Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	16.4 % 83.6 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

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**Travel Time Matrix, Delay Per PCU  
Delay Per PCU :**

	A	B	C	D	E	F	G	H
A	0.0	32.0	140.5	0.0	98.4	0.0	59.9	31.8
B	51.5	0.0	55.8	83.1	83.9	0.0	0.0	0.0
C	36.2	36.5	0.0	0.0	105.5	0.0	55.2	44.7
D	0.0	0.0	0.0	0.0	68.0	45.8	46.2	0.0
E	57.5	58.0	94.1	57.6	0.0	97.2	97.5	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	56.2	0.0
G	108.5	0.0	148.3	38.1	18.4	23.0	0.0	0.0
H	0.0	0.0	0.0	67.5	70.3	0.0	22.3	0.0

**Scenario 11: '2017 SAT (Furnished) Ped Demands' (FG2: '2017 SAT Flow', Plan 1: 'Plan 1 - Ped Demands')  
Network Layout Diagram**





Appendix A

**Network Results**

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	<b>88.0%</b>	<b>1287</b>	<b>1167</b>	<b>19</b>	<b>93.5</b>	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	<b>63.3%</b>	<b>568</b>	<b>162</b>	<b>4</b>	<b>21.8</b>	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	51:45	45	588	2080:1940	663+445	53.1 : 53.1%	-	-	-	4.1	24.9	7.8
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	51	-	404	1940:1940	791+144	42.5 : 47.2%	29	39	0	2.8	25.0	7.3
2/1	Mains S Rd Departure	U	-		-	-	-	574	2080	2080	27.6%	-	-	-	0.2	1.2	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	486	1940	1940	25.1%	-	-	-	0.2	1.2	0.2
3/1	Chamber St Departure	U	-		-	-	-	655	2080	2080	31.5%	-	-	-	0.2	1.3	0.2
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	40	-	437	1940:1940	356+342	62.6 : 62.6%	184	30	0	3.3	26.8	9.7
4/3	Chalmers St South Right	O	C1:7		1	40	-	185	1940	391	47.3%	99	83	3	2.2	42.0	5.4
5/1	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	583	2080	2080	28.0%	-	-	-	0.2	1.2	2.5
5/2	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	340	1940	1940	17.5%	-	-	-	0.1	1.1	0.1
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	56	56	418	2080	1040	40.2%	-	-	-	1.3	11.5	4.5
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	56	-	671	1940:1940	721+417	58.9 : 58.9%	236	10	1	1.5	8.2	2.9

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7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	23:29	23	272	1940:1940	397+33	63.3 : 63.3%	21	0	0	3.9	51.8	8.2
8/1	Goulding Ave Departure	U	C1:5		1	40	-	337	1940	698	48.3%	-	-	-	1.8	19.5	4.9
Ped Link: P1	Mains S Rd	-	C1:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Chalmers St Crossing	-	C1:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Goulding Ave	-	C1:9		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>88.0%</b>	<b>183</b>	<b>1006</b>	<b>15</b>	<b>66.5</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	285	2080	504	56.6%	109	176	0	1.8	23.3	7.9
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	23	-	346	2080	438	79.0%	-	-	-	5.9	61.4	12.3
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	23	-	395	1940:1940	393+91	81.7 : 81.7%	74	0	0	6.6	60.5	11.9
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	820	2080	2080	39.4%	-	-	-	0.3	1.5	6.2
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	494	1940	1940	25.5%	-	-	-	0.2	1.2	0.2
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	26	-	573	1940:1940	276+440	80.1 : 80.1%	-	-	-	4.4	27.6	10.3
3/3	Carmen Rd S Ahead	U	C2:6		1	26	-	293	1940	459	63.8%	-	-	-	4.1	49.8	9.2
3/4	Carmen Rd S Right	O	C2:8		1	18	-	216	1940	323	66.8%	0	212	4	3.7	61.0	7.3
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	888	2080	2080	42.7%	-	-	-	0.4	1.7	9.6

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4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	-	412	1940	1940	21.2%	-	-	-	0.1	1.2	0.1
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	52:18	0	209	2080:2080	16+346	57.7 : 57.7%	-	-	-	3.2	55.1	6.6
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	52	-	794	1940	902	88.0%	-	-	-	9.6	43.3	26.2
5/4	Mains S Rd Westbound Right	O	C2:5		1	23	-	347	1940	408	85.0%	0	341	6	6.8	70.3	13.1
6/1	Carmen Rd S Departure	U	-		-	-	-	405	1940	1940	20.9%	-	-	-	0.1	1.2	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	383	1940	1940	19.7%	-	-	-	0.1	1.2	0.1
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	26	20	392	2080	493	79.6%	-	-	-	6.3	58.2	13.5
7/2	Shands Rd N Ahead	U	C2:7		1	26	-	360	1940	459	78.4%	-	-	-	5.8	58.2	12.3
7/3	Shands Rd N Right	O	C2:9		1	18	-	281	1940	323	86.9%	0	276	5	6.5	83.7	11.6
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	231	2080	2080	11.1%	-	-	-	0.1	1.0	0.1
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	858	1940	1940	44.2%	-	-	-	0.4	1.7	0.4
Ped Link: P1	Shands Rd	-	C2:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Mains S Rd	-	C2:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>55.8%</b>	<b>364</b>	<b>0</b>	<b>0</b>	<b>4.4</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	183	1940	391	46.8%	183	0	0	1.3	25.0	4.0
2/1	Chalmers St Departure	U	-		-	-	-	431	1940	1940	22.2%	-	-	-	0.1	1.2	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	754	2080	2080	36.3%	-	-	-	0.3	1.4	0.3

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3/2	Carmen Rd N Ahead	U	-	-	-	-	560	1940	1940	28.9%	-	-	-	0.2	1.6	8.9
4/1	Carmen Rd Departure	U	-	-	-	-	694	2080	2080	33.4%	-	-	-	0.3	1.3	0.3
4/2	Carmen Rd Departure	U	-	-	-	-	553	1940	1940	28.5%	-	-	-	0.2	1.3	0.2
5/1	Carmen Rd South Ahead	U	-	-	-	-	1082	1940	1940	55.8%	-	-	-	0.6	2.1	0.6
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	181	1940:1940	0+636	0.0 : 28.5%	181	0	0	1.0	19.8	3.6
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	573	1940	1940	29.5%	-	-	-	0.2	1.3	0.2
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	509	1940	1940	26.2%	-	-	-	0.2	1.3	0.2
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>31.3%</b>	<b>172</b>	<b>0</b>	<b>0</b>	<b>0.9</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	69	1940	1940	3.6%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	172	1940	550	31.3%	172	0	0	0.2	4.9	0.8
3/1	Mall Entry Left Ahead	U	-	-	-	-	534	2080	2080	25.7%	-	-	-	0.2	1.2	0.2
3/2	Mall Entry Ahead	U	-	-	-	-	389	1940	1940	20.1%	-	-	-	0.1	1.2	0.1
4/1	Mall Exit Ahead	U	-	-	-	-	581	2080	2080	27.9%	-	-	-	0.2	1.2	0.2
4/2	Mall Exit Ahead	U	-	-	-	-	445	1940	1940	22.9%	-	-	-	0.1	1.2	0.1
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		42.3		Total Delay for Signalled Lanes (pcuHr):		20.87		Cycle Time (s):		114				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		2.2		Total Delay for Signalled Lanes (pcuHr):		62.85		Cycle Time (s):		114				
		PRC Over All Lanes (%):		2.2		Total Delay Over All Lanes(pcuHr):		93.53								

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**Network Summary**

Controller	Stream	PRC (%)	Total Delay for stream (pcuHr)
C1 - Mains S Rd / Chalmers St	1	42.29	20.87
C2 - Mains S Rd / Shands Rd	1	2.23	62.85
<b>Total Network Delay:</b> 93.53 pcuHr			
<b>Worst PRC:</b> 2.23 % (On Lane J2:5/3 in Stream 1)			
<b>Level Of Service:</b> D			

Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead	Inf	89.0 %	2080	2080
				Arm J1:8 Left	Inf	11.0 %		
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
				Arm J1:2 Left	Inf	31.1 %		
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:3 Ahead	Inf	68.9 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

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Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead	Inf	82.1 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:8 Left	Inf	17.9 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

Appendix A

J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	33.2 % 66.8 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	0.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	12.9 % 87.1 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

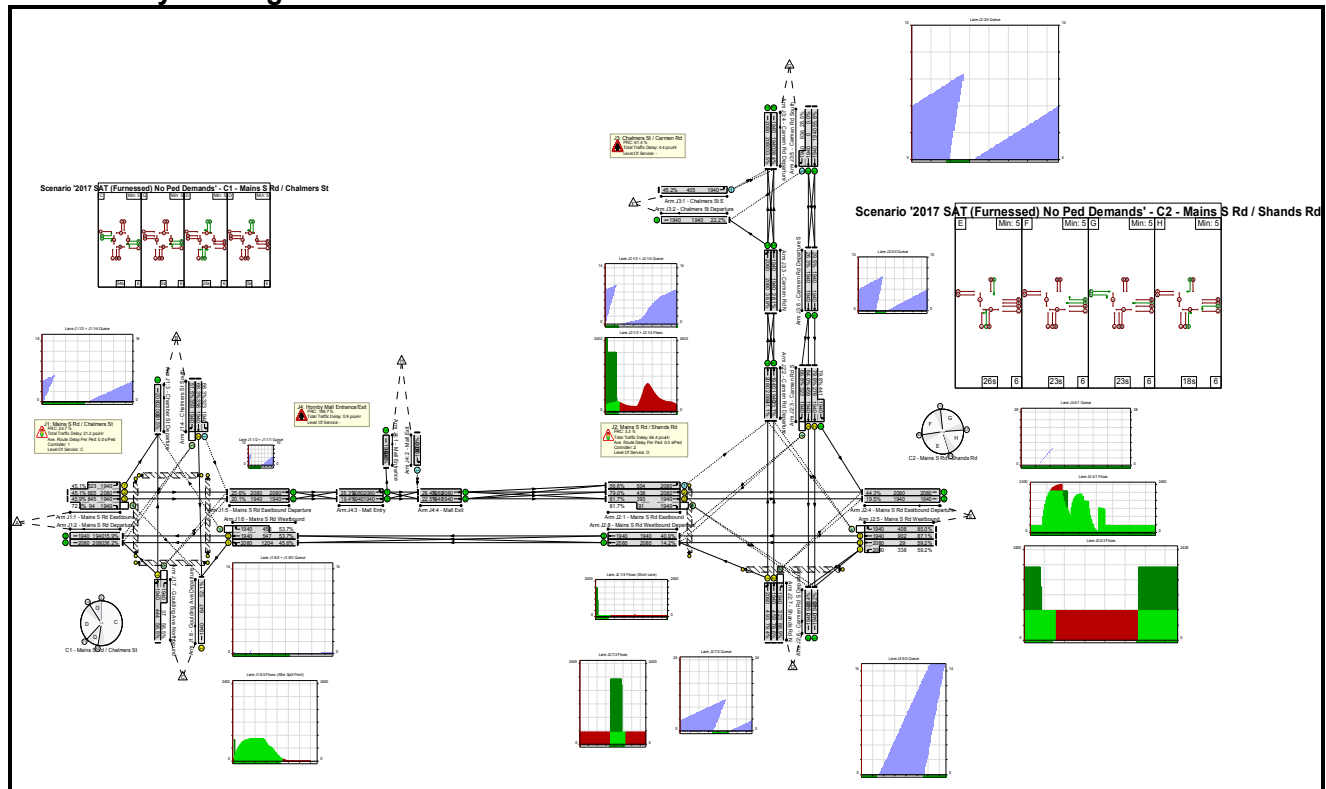


Appendix A

**Travel Time Matrix, Delay Per PCU  
Delay Per PCU :**

	A	B	C	D	E	F	G	H
A	0.0	27.8	78.8	0.0	90.9	0.0	59.0	27.0
B	43.2	0.0	44.6	82.3	83.6	39.1	39.2	0.0
C	53.3	53.3	0.0	0.0	102.2	0.0	65.6	52.2
D	97.5	105.2	146.4	0.0	85.1	62.1	62.5	0.0
E	51.1	58.5	82.1	56.6	0.0	74.2	74.3	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	26.2	0.0
G	75.6	0.0	89.9	54.4	18.6	21.0	0.0	0.0
H	0.0	0.0	0.0	64.1	69.2	0.0	28.9	0.0

**Scenario 12: '2017 SAT (Furnished) No Ped Demands' (FG2: '2017 SAT Flow', Plan 2: 'Plan 2 - No Ped Demands')  
Network Layout Diagram**



Appendix A

**Network Results**

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	<b>87.1%</b>	<b>1349</b>	<b>1083</b>	<b>41</b>	<b>92.8</b>	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	<b>72.2%</b>	<b>630</b>	<b>77</b>	<b>26</b>	<b>21.2</b>	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	54	0	536	2080:1940	665+523	45.1 : 45.1%	-	-	-	3.0	20.4	6.1
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	54	-	456	1940:1940	845+94	45.9 : 72.2%	46	0	22	3.5	27.4	8.3
2/1	Mains S Rd Departure	U	-		-	-	-	752	2080	2080	36.2%	-	-	-	0.3	1.4	0.3
2/2	Mains S Rd Departure	U	-		-	-	-	308	1940	1940	15.9%	-	-	-	0.1	1.1	0.1
3/1	Chamber St Departure	U	-		-	-	-	655	2080	2080	31.5%	-	-	-	0.2	1.3	0.2
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	37	-	437	1940:1940	336+323	66.3 : 66.3%	184	30	0	3.7	30.1	10.4
4/3	Chalmers St South Right	O	C1:7		1	37	-	185	1940	359	51.5%	143	39	3	2.6	51.5	5.7
5/1	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	533	2080	2080	25.6%	-	-	-	0.2	1.2	0.2
5/2	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	390	1940	1940	20.1%	-	-	-	0.1	1.2	0.1
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	65	0	549	2080	1204	45.6%	-	-	-	1.3	8.2	4.0
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	65	-	540	1940:1940	547+458	53.7 : 53.7%	237	9	1	1.2	7.9	1.4

Appendix A

7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	26	0	272	1940:1940	444+37	56.5 : 56.5%	21	0	0	3.5	46.7	7.7
8/1	Goulding Ave Departure	U	C1:5		1	37	-	337	1940	647	52.1%	-	-	-	1.5	16.1	5.0
Ped Link: P1	Mains S Rd	-	C1:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Chalmers St Crossing	-	C1:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P4	Goulding Ave	-	C1:9		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>87.1%</b>	<b>183</b>	<b>1005</b>	<b>15</b>	<b>66.4</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	285	2080	504	56.6%	109	176	0	1.8	23.0	7.7
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	23	-	346	2080	438	79.0%	-	-	-	6.0	62.5	12.1
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	23	-	395	1940:1940	393+91	81.7 : 81.7%	74	0	0	6.7	61.4	11.9
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	855	2080	2080	41.1%	-	-	-	0.4	1.5	6.3
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	459	1940	1940	23.7%	-	-	-	0.2	1.2	0.2
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	26	-	572	1940:1940	276+441	79.8 : 79.8%	-	-	-	4.3	27.4	10.1
3/3	Carmen Rd S Ahead	U	C2:6		1	26	-	294	1940	459	64.0%	-	-	-	4.1	49.9	9.2
3/4	Carmen Rd S Right	O	C2:8		1	18	-	216	1940	323	66.8%	0	212	4	3.7	61.0	7.3
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	922	2080	2080	44.3%	-	-	-	0.4	1.7	9.3

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4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	-	378	1940	1940	19.5%	-	-	-	0.1	1.2	0.1
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	52:18	0	217	2080:2080	29+338	59.2 : 59.2%	-	-	-	3.3	55.0	6.7
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	52	-	786	1940	902	87.1%	-	-	-	9.2	42.1	25.5
5/4	Mains S Rd Westbound Right	O	C2:5		1	23	-	347	1940	408	85.0%	0	341	6	6.8	70.3	13.1
6/1	Carmen Rd S Departure	U	-		-	-	-	392	1940	1940	20.2%	-	-	-	0.1	1.2	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	396	1940	1940	20.4%	-	-	-	0.1	1.2	0.1
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	26	0	391	2080	493	79.4%	-	-	-	6.3	58.0	13.5
7/2	Shands Rd N Ahead	U	C2:7		1	26	-	361	1940	459	78.6%	-	-	-	5.9	58.4	12.4
7/3	Shands Rd N Right	O	C2:9		1	18	-	281	1940	323	86.9%	0	276	5	6.5	83.7	11.6
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	296	2080	2080	14.2%	-	-	-	0.1	1.0	0.1
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	793	1940	1940	40.9%	-	-	-	0.3	1.6	0.3
Ped Link: P1	Shands Rd	-	C2:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Mains S Rd	-	C2:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>55.8%</b>	<b>364</b>	<b>0</b>	<b>0</b>	<b>4.4</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	183	1940	405	45.2%	183	0	0	1.2	24.3	4.0
2/1	Chalmers St Departure	U	-		-	-	-	431	1940	1940	22.2%	-	-	-	0.1	1.2	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	768	2080	2080	36.9%	-	-	-	0.3	1.4	0.3

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3/2	Carmen Rd N Ahead	U	-	-	-	-	546	1940	1940	28.1%	-	-	-	0.3	1.7	9.6
4/1	Carmen Rd Departure	U	-	-	-	-	697	2080	2080	33.5%	-	-	-	0.3	1.3	0.3
4/2	Carmen Rd Departure	U	-	-	-	-	550	1940	1940	28.4%	-	-	-	0.2	1.3	0.2
5/1	Carmen Rd South Ahead	U	-	-	-	-	1082	1940	1940	55.8%	-	-	-	0.6	2.1	0.6
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	181	1940:1940	0+636	0.0 : 28.5%	181	0	0	1.0	19.7	3.5
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	572	1940	1940	29.5%	-	-	-	0.2	1.3	0.2
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	510	1940	1940	26.3%	-	-	-	0.2	1.3	0.2
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>30.0%</b>	<b>172</b>	<b>0</b>	<b>0</b>	<b>0.9</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	69	1940	1940	3.6%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	172	1940	573	30.0%	172	0	0	0.2	4.5	0.6
3/1	Mall Entry Left Ahead	U	-	-	-	-	547	2080	2080	26.3%	-	-	-	0.2	1.2	0.2
3/2	Mall Entry Ahead	U	-	-	-	-	376	1940	1940	19.4%	-	-	-	0.1	1.2	0.1
4/1	Mall Exit Ahead	U	-	-	-	-	590	2080	2080	28.4%	-	-	-	0.2	1.2	0.2
4/2	Mall Exit Ahead	U	-	-	-	-	436	1940	1940	22.5%	-	-	-	0.1	1.2	0.1
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%)		24.7		Total Delay for Signalled Lanes (pcuHr):		20.28		Cycle Time (s):		114				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%)		3.3		Total Delay for Signalled Lanes (pcuHr):		62.80		Cycle Time (s):		114				
		PRC Over All Lanes (%)		3.3		Total Delay Over All Lanes(pcuHr):		92.84								

Appendix A

**Network Summary**

Controller	Stream	PRC (%)	Total Delay for stream (pcuHr)
C1 - Mains S Rd / Chalmers St	1	24.72	20.28
C2 - Mains S Rd / Shands Rd	1	3.27	62.80
<b>Total Network Delay:</b> 92.84 pcuHr			
<b>Worst PRC:</b> 3.27 % (On Lane J2:5/3 in Stream 1)			
<b>Level Of Service:</b> D			

Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead	Inf	91.6 %	2080	2080
				Arm J1:8 Left	Inf	8.4 %		
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
				Arm J1:2 Left	Inf	31.1 %		
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:3 Ahead	Inf	68.9 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

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Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead	Inf	82.1 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:8 Left	Inf	17.9 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080



Appendix A

J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	32.6 % 67.4 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	0.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

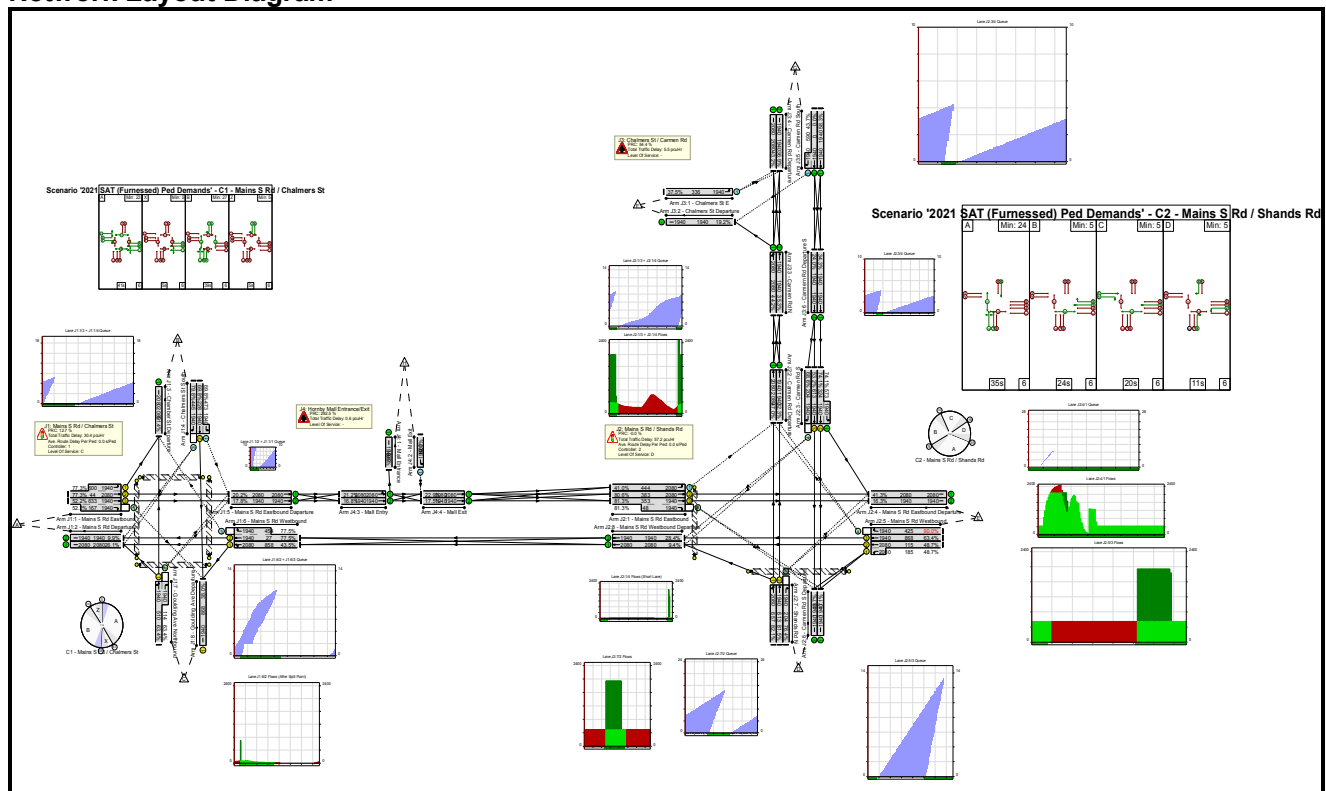
Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	12.6 % 87.4 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

Appendix A

**Travel Time Matrix, Delay Per PCU  
Delay Per PCU :**

	A	B	C	D	E	F	G	H
A	0.0	21.4	80.6	0.0	90.9	0.0	55.9	24.4
B	52.8	0.0	49.2	86.0	87.0	41.6	41.7	0.0
C	48.0	48.0	0.0	0.0	93.8	0.0	63.9	50.7
D	88.8	103.4	145.3	0.0	85.1	62.2	62.6	0.0
E	48.9	56.5	80.4	56.9	0.0	74.2	74.3	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	25.6	0.0
G	75.0	0.0	89.9	54.4	18.4	20.9	0.0	0.0
H	0.0	0.0	0.0	63.8	69.1	0.0	28.6	0.0

**Scenario 13: '2021 SAT (Furnished) Ped Demands' (FG5: '2021 SAT Base', Plan 1: 'Plan 1 - Ped Demands')  
Network Layout Diagram**



Appendix A

**Network Results**

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	<b>90.0%</b>	<b>1417</b>	<b>1163</b>	<b>20</b>	<b>93.7</b>	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	<b>79.8%</b>	<b>783</b>	<b>405</b>	<b>8</b>	<b>30.4</b>	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	41:35	35	498	2080:1940	44+600	77.3 : 77.3%	-	-	-	6.5	46.6	15.2
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	41	-	417	1940:1940	633+167	52.2 : 52.2%	29	58	0	3.6	31.4	8.4
2/1	Mains S Rd Departure	U	-		-	-	-	542	2080	2080	26.1%	-	-	-	0.2	1.2	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	193	1940	1940	9.9%	-	-	-	0.1	1.0	0.1
3/1	Chamber St Departure	U	-		-	-	-	1069	2080	2080	51.4%	-	-	-	0.9	3.0	16.8
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	50	-	489	1940:1940	228+473	69.8 : 69.8%	284	46	0	2.3	17.0	6.8
4/3	Chalmers St South Right	O	C1:7		1	50	-	355	1940	445	79.8%	160	189	6	5.5	55.6	12.5
5/1	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	420	2080	2080	20.2%	-	-	-	0.1	1.1	0.1
5/2	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	346	1940	1940	17.8%	-	-	-	0.1	1.1	0.1
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	46	46	373	2080	858	43.5%	-	-	-	1.0	9.4	4.2
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	46	-	373	1940:1940	27+454	77.5 : 77.5%	238	112	2	3.6	34.3	12.5

Appendix A

7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	33:39	33	395	1940:1940	510+114	63.4 : 63.4%	72	0	0	4.5	41.2	10.3
8/1	Goulding Ave Departure	U	C1:5		1	50	-	330	1940	868	38.0%	-	-	-	2.1	23.3	8.5
Ped Link: P1	Mains S Rd	-	C1:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Chalmers St Crossing	-	C1:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Goulding Ave	-	C1:9		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>90.0%</b>	<b>131</b>	<b>757</b>	<b>12</b>	<b>57.2</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	182	2080	444	41.0%	92	90	0	0.6	12.2	3.7
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	20	-	309	2080	383	80.6%	-	-	-	5.6	65.6	11.3
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	20	-	326	1940:1940	353+48	81.3 : 81.3%	39	0	0	5.9	64.8	10.8
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	977	2080	2080	47.0%	-	-	-	0.5	1.9	9.8
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	626	1940	1940	32.3%	-	-	-	0.2	1.4	0.2
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	35	-	665	1940:1940	324+573	74.1 : 74.1%	-	-	-	3.6	19.3	9.9
3/3	Carmen Rd S Ahead	U	C2:6		1	35	-	326	1940	613	53.2%	-	-	-	3.5	38.3	9.0
3/4	Carmen Rd S Right	O	C2:8		1	11	-	140	1940	204	68.6%	0	138	2	3.0	76.3	5.3
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	860	2080	2080	41.3%	-	-	-	0.4	1.7	9.2

Appendix A

4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	-	317	1940	1940	16.3%	-	-	-	0.1	1.1	0.1
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	50:11	0	146	2080:2080	115+185	48.7 : 48.7%	-	-	-	1.9	47.9	3.1
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	50	-	550	1940	868	63.4%	-	-	-	4.6	29.9	14.2
5/4	Mains S Rd Westbound Right	O	C2:5		1	24	-	383	1940	425	90.0%	0	376	7	8.4	79.2	15.5
6/1	Carmen Rd S Departure	U	-		-	-	-	332	1940	1940	17.1%	-	-	-	0.1	1.1	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	363	1940	1940	18.7%	-	-	-	0.1	1.1	0.1
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	35	29	539	2080	657	82.1%	-	-	-	7.6	50.7	17.9
7/2	Shands Rd N Ahead	U	C2:7		1	35	-	499	1940	613	81.5%	-	-	-	7.1	51.2	16.7
7/3	Shands Rd N Right	O	C2:9		1	11	-	156	1940	204	76.4%	0	153	3	3.7	84.7	6.3
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	196	2080	2080	9.4%	-	-	-	0.1	1.0	0.1
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	550	1940	1940	28.4%	-	-	-	0.2	1.3	0.2
Ped Link: P1	Shands Rd	-	C2:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Mains S Rd	-	C2:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>58.3%</b>	<b>384</b>	<b>0</b>	<b>0</b>	<b>5.5</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	126	1940	336	37.5%	126	0	0	1.0	27.8	2.9
2/1	Chalmers St Departure	U	-		-	-	-	373	1940	1940	19.2%	-	-	-	0.1	1.1	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	919	2080	2080	44.2%	-	-	-	0.4	1.5	0.4

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3/2	Carmen Rd N Ahead	U	-	-	-	-	684	1940	1940	35.3%	-	-	-	0.3	1.8	12.7
4/1	Carmen Rd Departure	U	-	-	-	-	899	2080	2080	43.2%	-	-	-	0.4	1.5	0.4
4/2	Carmen Rd Departure	U	-	-	-	-	715	1940	1940	36.9%	-	-	-	0.3	1.5	9.5
5/1	Carmen Rd South Ahead	U	-	-	-	-	1131	1940	1940	58.3%	-	-	-	0.7	2.2	0.7
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	258	1940:1940	0+590	0.0 : 43.7%	258	0	0	1.9	26.3	5.9
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	665	1940	1940	34.3%	-	-	-	0.3	1.4	0.3
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	466	1940	1940	24.0%	-	-	-	0.2	1.2	0.2
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>22.9%</b>	<b>119</b>	<b>0</b>	<b>0</b>	<b>0.6</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	68	1940	1940	3.5%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	119	1940	627	19.0%	119	0	0	0.1	3.5	0.1
3/1	Mall Entry Left Ahead	U	-	-	-	-	440	2080	2080	21.2%	-	-	-	0.1	1.1	0.1
3/2	Mall Entry Ahead	U	-	-	-	-	326	1940	1940	16.8%	-	-	-	0.1	1.1	0.1
4/1	Mall Exit Ahead	U	-	-	-	-	477	2080	2080	22.9%	-	-	-	0.1	1.1	0.1
4/2	Mall Exit Ahead	U	-	-	-	-	340	1940	1940	17.5%	-	-	-	0.1	1.1	0.1
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		12.7		Total Delay for Signalled Lanes (pcuHr):		29.07		Cycle Time (s):		114				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		-0.0		Total Delay for Signalled Lanes (pcuHr):		54.82		Cycle Time (s):		114				
		PRC Over All Lanes (%):		-0.0		Total Delay Over All Lanes(pcuHr):		93.71								

Appendix A

**Network Summary**

Controller	Stream	PRC (%)	Total Delay for stream (pcuHr)
C1 - Mains S Rd / Chalmers St	1	12.73	29.07
C2 - Mains S Rd / Shands Rd	1	-0.03	54.82
<b>Total Network Delay:</b> 93.71 pcuHr			
<b>Worst PRC:</b> -0.03 % (On Lane J2:5/4 in Stream 1)			
<b>Level Of Service:</b> D			

Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead	Inf	77.5 %	2080	2080
				Arm J1:8 Left	Inf	22.5 %		
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
				Arm J1:2 Left	Inf	21.7 %		
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:3 Ahead	Inf	78.3 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940



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Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead	Inf	100.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:8 Left	Inf	0.0 %		
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

## Appendix A

J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	12.5 % 87.5 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	0.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	15.5 % 84.5 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

Appendix A

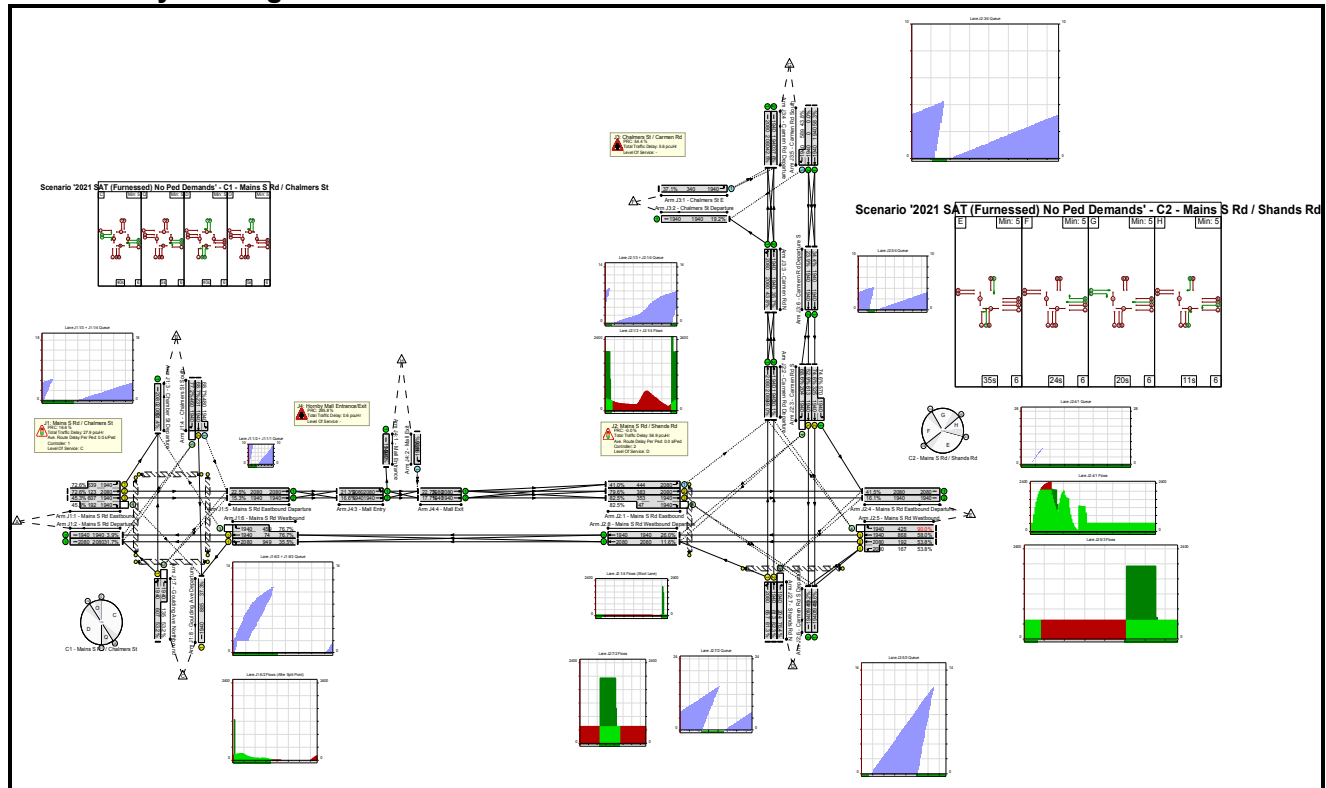
**Travel Time Matrix, Delay Per PCU**

**Delay Per PCU :**

	A	B	C	D	E	F	G	H
A	0.0	50.3	78.6	0.0	102.2	0.0	57.1	35.3
B	56.7	0.0	36.5	78.6	83.1	0.0	0.0	0.0
C	42.8	43.4	0.0	0.0	99.2	0.0	54.9	42.7
D	0.0	0.0	0.0	0.0	86.1	55.4	55.9	0.0
E	40.8	69.9	71.9	60.5	0.0	83.5	83.8	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	29.3	0.0
G	94.4	0.0	107.1	43.0	13.8	27.4	0.0	0.0
H	0.0	0.0	0.0	67.6	73.4	0.0	21.6	0.0

**Scenario 14: '2021 SAT (Furnished) No Ped Demands' (FG5: '2021 SAT Base', Plan 2: 'Plan 2 - No Ped Demands')**

**Network Layout Diagram**



Appendix A

**Network Results**

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	<b>90.0%</b>	<b>1562</b>	<b>1018</b>	<b>20</b>	<b>91.0</b>	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	<b>77.2%</b>	<b>929</b>	<b>260</b>	<b>8</b>	<b>27.9</b>	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	40	0	553	2080:1940	123+639	72.6 : 72.6%	-	-	-	6.0	38.8	14.7
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	40	-	362	1940:1940	607+192	45.3 : 45.3%	87	0	0	3.3	32.4	6.9
2/1	Mains S Rd Departure	U	-		-	-	-	660	2080	2080	31.7%	-	-	-	0.2	1.3	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	75	1940	1940	3.9%	-	-	-	0.0	1.0	0.0
3/1	Chamber St Departure	U	-		-	-	-	1069	2080	2080	51.4%	-	-	-	0.6	2.0	9.3
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	51	-	489	1940:1940	231+480	68.7 : 68.7%	284	46	0	2.2	16.1	6.6
4/3	Chalmers St South Right	O	C1:7		1	51	-	355	1940	460	77.2%	244	105	6	5.4	55.0	12.1
5/1	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	469	2080	2080	22.5%	-	-	-	0.1	1.1	0.1
5/2	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	297	1940	1940	15.3%	-	-	-	0.1	1.1	0.1
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	51	0	337	2080	949	35.5%	-	-	-	0.7	7.2	2.8
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	51	-	409	1940:1940	74+459	76.7 : 76.7%	243	108	1	3.6	31.8	12.5

Appendix A

7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	40	0	395	1940:1940	607+135	53.2 : 53.2%	72	0	0	3.7	33.4	9.1
8/1	Goulding Ave Departure	U	C1:5		1	51	-	330	1940	885	37.3%	-	-	-	2.0	21.9	8.5
Ped Link: P1	Mains S Rd	-	C1:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Chalmers St Crossing	-	C1:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P4	Goulding Ave	-	C1:9		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>90.0%</b>	<b>130</b>	<b>758</b>	<b>12</b>	<b>56.9</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	182	2080	444	41.0%	91	91	0	0.6	12.0	3.7
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	20	-	305	2080	383	79.6%	-	-	-	5.4	64.2	11.1
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	20	-	330	1940:1940	353+47	82.5 : 82.5%	39	0	0	6.0	65.8	11.0
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	1020	2080	2080	49.0%	-	-	-	0.6	2.0	9.3
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	583	1940	1940	30.1%	-	-	-	0.2	1.3	0.2
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	35	-	667	1940:1940	325+570	74.6 : 74.6%	-	-	-	3.6	19.6	10.0
3/3	Carmen Rd S Ahead	U	C2:6		1	35	-	324	1940	613	52.9%	-	-	-	3.4	38.3	8.9
3/4	Carmen Rd S Right	O	C2:8		1	11	-	140	1940	204	68.6%	0	138	2	3.0	76.3	5.3
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	864	2080	2080	41.5%	-	-	-	0.4	1.7	9.1

Appendix A

4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	-	313	1940	1940	16.1%	-	-	-	0.1	1.1	0.1
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	50:11	0	193	2080:2080	192+167	53.8 : 53.8%	-	-	-	2.3	42.8	3.2
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	50	-	503	1940	868	58.0%	-	-	-	4.0	28.4	12.6
5/4	Mains S Rd Westbound Right	O	C2:5		1	24	-	383	1940	425	90.0%	0	376	7	8.4	79.2	15.5
6/1	Carmen Rd S Departure	U	-		-	-	-	322	1940	1940	16.6%	-	-	-	0.1	1.1	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	373	1940	1940	19.2%	-	-	-	0.1	1.1	0.1
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	35	0	534	2080	657	81.3%	-	-	-	7.4	50.1	17.5
7/2	Shands Rd N Ahead	U	C2:7		1	35	-	504	1940	613	82.3%	-	-	-	7.3	52.0	16.9
7/3	Shands Rd N Right	O	C2:9		1	11	-	156	1940	204	76.4%	0	153	3	3.7	84.7	6.3
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	242	2080	2080	11.6%	-	-	-	0.1	1.0	0.1
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	504	1940	1940	26.0%	-	-	-	0.2	1.3	0.2
Ped Link: P1	Shands Rd	-	C2:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Mains S Rd	-	C2:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>58.3%</b>	<b>384</b>	<b>0</b>	<b>0</b>	<b>5.6</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	126	1940	340	37.1%	126	0	0	1.0	27.6	2.8
2/1	Chalmers St Departure	U	-		-	-	-	373	1940	1940	19.2%	-	-	-	0.1	1.1	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	910	2080	2080	43.8%	-	-	-	0.4	1.5	0.4

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3/2	Carmen Rd N Ahead	U	-	-	-	-	693	1940	1940	35.7%	-	-	-	0.4	2.2	15.4
4/1	Carmen Rd Departure	U	-	-	-	-	884	2080	2080	42.5%	-	-	-	0.4	1.5	0.4
4/2	Carmen Rd Departure	U	-	-	-	-	730	1940	1940	37.6%	-	-	-	0.3	1.6	11.1
5/1	Carmen Rd South Ahead	U	-	-	-	-	1131	1940	1940	58.3%	-	-	-	0.7	2.2	0.7
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	258	1940:1940	0+589	0.0 : 43.8%	258	0	0	1.9	26.4	5.9
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	667	1940	1940	34.4%	-	-	-	0.3	1.4	0.3
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	464	1940	1940	23.9%	-	-	-	0.2	1.2	0.2
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>22.7%</b>	<b>119</b>	<b>0</b>	<b>0</b>	<b>0.6</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	68	1940	1940	3.5%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	119	1940	675	17.6%	119	0	0	0.1	3.2	0.1
3/1	Mall Entry Left Ahead	U	-	-	-	-	443	2080	2080	21.3%	-	-	-	0.1	1.1	0.1
3/2	Mall Entry Ahead	U	-	-	-	-	323	1940	1940	16.6%	-	-	-	0.1	1.1	0.1
4/1	Mall Exit Ahead	U	-	-	-	-	473	2080	2080	22.7%	-	-	-	0.1	1.1	0.1
4/2	Mall Exit Ahead	U	-	-	-	-	344	1940	1940	17.7%	-	-	-	0.1	1.1	0.1
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		16.6		Total Delay for Signalled Lanes (pcuHr):		26.79		Cycle Time (s):		114				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		-0.0		Total Delay for Signalled Lanes (pcuHr):		54.59		Cycle Time (s):		114				
		PRC Over All Lanes (%):		-0.0		Total Delay Over All Lanes(pcuHr):		91.02								

Appendix A

**Network Summary**

Controller	Stream	PRC (%)	Total Delay for stream (pcuHr)
C1 - Mains S Rd / Chalmers St	1	16.58	26.79
C2 - Mains S Rd / Shands Rd	1	-0.03	54.59
<b>Total Network Delay:</b> 91.02 pcuHr			
<b>Worst PRC:</b> -0.03 % (On Lane J2:5/4 in Stream 1)			
<b>Level Of Service:</b> D			



Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead	Inf	75.1 %	2080	2080
				Arm J1:8 Left	Inf	24.9 %		
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
				Arm J1:2 Left	Inf	21.7 %		
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:3 Ahead	Inf	78.3 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

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Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead	Inf	100.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:8 Left	Inf	0.0 %		
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

## Appendix A

J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	12.6 % 87.4 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	0.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	15.3 % 84.7 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

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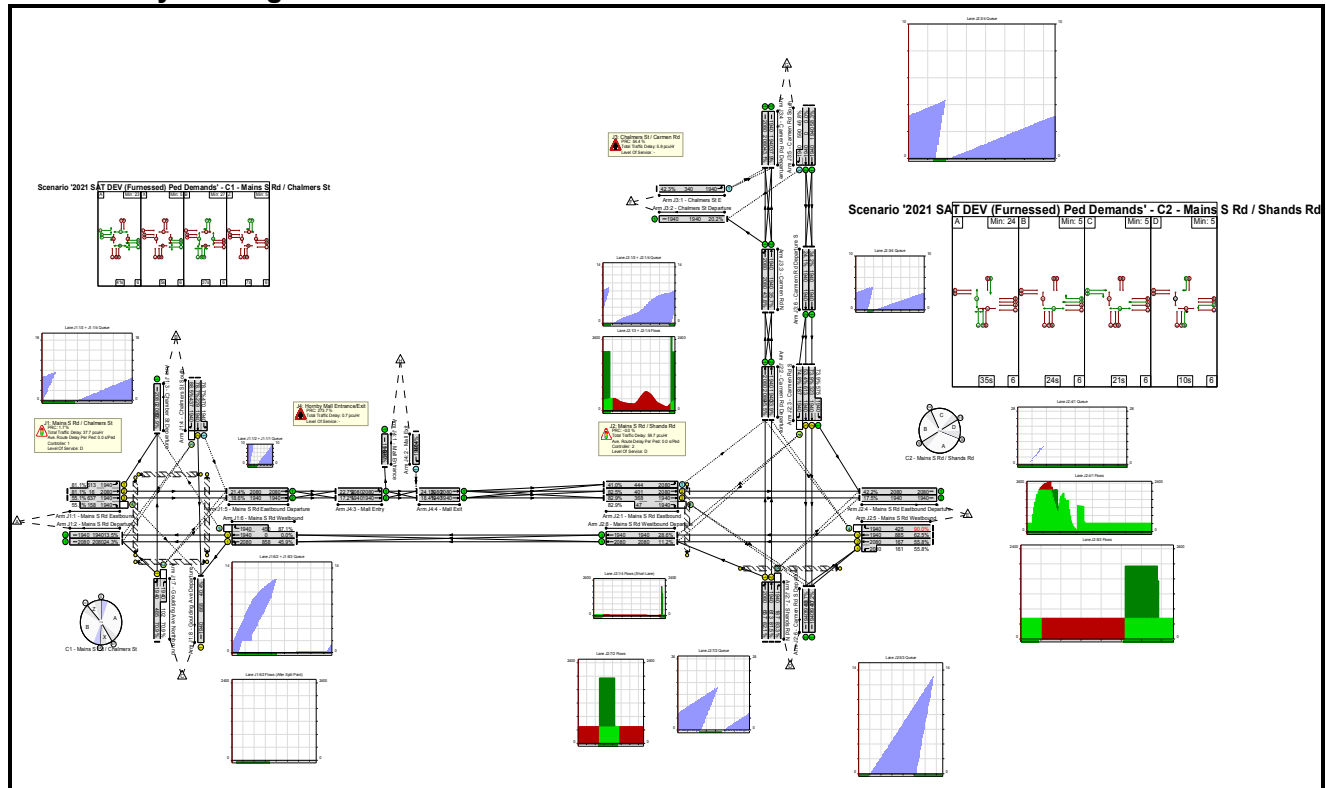
Travel Time Matrix, Delay Per PCU

Delay Per PCU :

	A	B	C	D	E	F	G	H
A	0.0	41.4	78.5	0.0	100.9	0.0	56.9	35.2
B	56.3	0.0	35.3	79.6	82.7	0.0	0.0	0.0
C	34.5	35.0	0.0	0.0	90.6	0.0	49.7	37.4
D	0.0	0.0	0.0	0.0	86.2	55.4	56.3	0.0
E	38.8	66.3	72.5	59.6	0.0	83.6	83.9	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	29.1	0.0
G	91.7	0.0	104.1	43.0	14.1	27.5	0.0	0.0
H	0.0	0.0	0.0	68.6	73.3	0.0	21.3	0.0

Scenario 15: '2021 SAT DEV (Furnished) Ped Demands' (FG6: '2021 SAT Base + Dev', Plan 1: 'Plan 1 - Ped Demands')

Network Layout Diagram



Appendix A

**Network Results**

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	<b>90.0%</b>	<b>1435</b>	<b>1282</b>	<b>30</b>	<b>104.0</b>	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	<b>88.5%</b>	<b>765</b>	<b>525</b>	<b>18</b>	<b>37.7</b>	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	41:35	35	510	2080:1940	16+613	81.1 : 81.1%	-	-	-	7.1	50.4	16.6
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	41	-	438	1940:1940	637+158	55.1 : 55.1%	29	58	0	3.9	32.1	9.1
2/1	Mains S Rd Departure	U	-		-	-	-	506	2080	2080	24.3%	-	-	-	0.2	1.1	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	261	1940	1940	13.5%	-	-	-	0.1	1.1	0.1
3/1	Chamber St Departure	U	-		-	-	-	1163	2080	2080	55.9%	-	-	-	1.1	3.5	21.8
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	50	-	550	1940:1940	229+470	78.7 : 78.7%	312	58	0	3.5	22.6	9.6
4/3	Chalmers St South Right	O	C1:7		1	50	-	387	1940	437	88.5%	119	255	13	7.6	70.3	15.2
5/1	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	446	2080	2080	21.4%	-	-	-	0.1	1.1	0.1
5/2	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	360	1940	1940	18.6%	-	-	-	0.1	1.1	0.1
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	46	46	394	2080	858	45.9%	-	-	-	1.1	10.3	4.8
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	46	-	392	1940:1940	0+450	0.0 : 87.1%	234	153	5	5.4	49.8	15.3

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7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	31:37	31	416	1940:1940	485+102	70.9 : 70.9%	72	0	0	5.3	46.1	11.8
8/1	Goulding Ave Departure	U	C1:5		1	50	-	351	1940	868	40.4%	-	-	-	2.2	22.5	8.6
Ped Link: P1	Mains S Rd	-	C1:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Chalmers St Crossing	-	C1:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Goulding Ave	-	C1:9		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>90.0%</b>	<b>131</b>	<b>757</b>	<b>12</b>	<b>59.7</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	182	2080	444	41.0%	92	90	0	0.6	12.1	3.7
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	21	-	331	2080	401	82.5%	-	-	-	6.2	67.7	12.2
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	21	-	344	1940:1940	368+47	82.9 : 82.9%	39	0	0	6.5	67.7	11.4
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	946	2080	2080	45.5%	-	-	-	0.5	1.9	9.7
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	657	1940	1940	33.9%	-	-	-	0.3	1.4	0.3
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	35	-	664	1940:1940	323+575	73.9 : 73.9%	-	-	-	3.5	19.2	9.7
3/3	Carmen Rd S Ahead	U	C2:6		1	35	-	327	1940	613	53.4%	-	-	-	3.5	38.4	9.0
3/4	Carmen Rd S Right	O	C2:8		1	10	-	140	1940	187	74.8%	0	138	2	3.4	86.2	5.7
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	878	2080	2080	42.2%	-	-	-	0.4	1.7	10.3

Appendix A

4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	-	339	1940	1940	17.5%	-	-	-	0.1	1.1	0.1
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	51:10	0	183	2080:2080	167+161	55.8 : 55.8%	-	-	-	2.3	45.2	3.3
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	51	-	553	1940	885	62.5%	-	-	-	4.5	29.0	14.0
5/4	Mains S Rd Westbound Right	O	C2:5		1	24	-	383	1940	425	90.0%	0	376	7	8.4	79.2	15.5
6/1	Carmen Rd S Departure	U	-		-	-	-	333	1940	1940	17.2%	-	-	-	0.1	1.1	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	362	1940	1940	18.7%	-	-	-	0.1	1.1	0.1
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	35	29	539	2080	657	82.1%	-	-	-	7.6	50.7	17.9
7/2	Shands Rd N Ahead	U	C2:7		1	35	-	499	1940	613	81.5%	-	-	-	7.1	51.2	16.7
7/3	Shands Rd N Right	O	C2:9		1	10	-	156	1940	187	83.3%	0	153	3	4.4	101.2	7.0
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	232	2080	2080	11.2%	-	-	-	0.1	1.0	0.1
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	554	1940	1940	28.6%	-	-	-	0.2	1.3	0.2
Ped Link: P1	Shands Rd	-	C2:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Mains S Rd	-	C2:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>58.3%</b>	<b>420</b>	<b>0</b>	<b>0</b>	<b>5.9</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	144	1940	340	42.3%	144	0	0	1.2	29.0	3.4
2/1	Chalmers St Departure	U	-		-	-	-	391	1940	1940	20.2%	-	-	-	0.1	1.2	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	910	2080	2080	43.8%	-	-	-	0.4	1.5	0.4

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3/2	Carmen Rd N Ahead	U	-	-	-	-	693	1940	1940	35.7%	-	-	-	0.3	1.6	11.7
4/1	Carmen Rd Departure	U	-	-	-	-	896	2080	2080	43.1%	-	-	-	0.4	1.5	0.4
4/2	Carmen Rd Departure	U	-	-	-	-	736	1940	1940	37.9%	-	-	-	0.3	1.6	9.5
5/1	Carmen Rd South Ahead	U	-	-	-	-	1131	1940	1940	58.3%	-	-	-	0.7	2.2	0.7
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	276	1940:1940	0+590	0.0 : 46.8%	276	0	0	2.1	26.9	6.4
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	664	1940	1940	34.2%	-	-	-	0.3	1.4	0.3
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	467	1940	1940	24.1%	-	-	-	0.2	1.2	0.2
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>24.1%</b>	<b>119</b>	<b>0</b>	<b>0</b>	<b>0.7</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	68	1940	1940	3.5%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	119	1940	614	19.4%	119	0	0	0.1	3.6	0.1
3/1	Mall Entry Left Ahead	U	-	-	-	-	472	2080	2080	22.7%	-	-	-	0.1	1.1	0.1
3/2	Mall Entry Ahead	U	-	-	-	-	334	1940	1940	17.2%	-	-	-	0.1	1.1	0.1
4/1	Mall Exit Ahead	U	-	-	-	-	501	2080	2080	24.1%	-	-	-	0.2	1.1	0.2
4/2	Mall Exit Ahead	U	-	-	-	-	356	1940	1940	18.4%	-	-	-	0.1	1.1	0.1
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		1.7		Total Delay for Signalled Lanes (pcuHr):		36.12		Cycle Time (s):		114				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		-0.0		Total Delay for Signalled Lanes (pcuHr):		57.33		Cycle Time (s):		114				
		PRC Over All Lanes (%):		-0.0		Total Delay Over All Lanes(pcuHr):		103.96								



Appendix A

**Network Summary**

Controller	Stream	PRC (%)	Total Delay for stream (pcuHr)
C1 - Mains S Rd / Chalmers St	1	1.70	36.12
C2 - Mains S Rd / Shands Rd	1	-0.03	57.33
<b>Total Network Delay:</b> 103.96 pcuHr			
<b>Worst PRC:</b> -0.03 % (On Lane J2:5/4 in Stream 1)			
<b>Level Of Service:</b> D			

Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead	Inf	78.7 %	2080	2080
				Arm J1:8 Left	Inf	21.3 %		
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	0.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
				Arm J1:2 Left	Inf	20.3 %		
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:3 Ahead	Inf	79.7 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

Appendix A

Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead	Inf	100.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:8 Left	Inf	0.0 %		
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

## Appendix A

J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	12.6 % 87.4 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	0.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	14.4 % 85.6 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

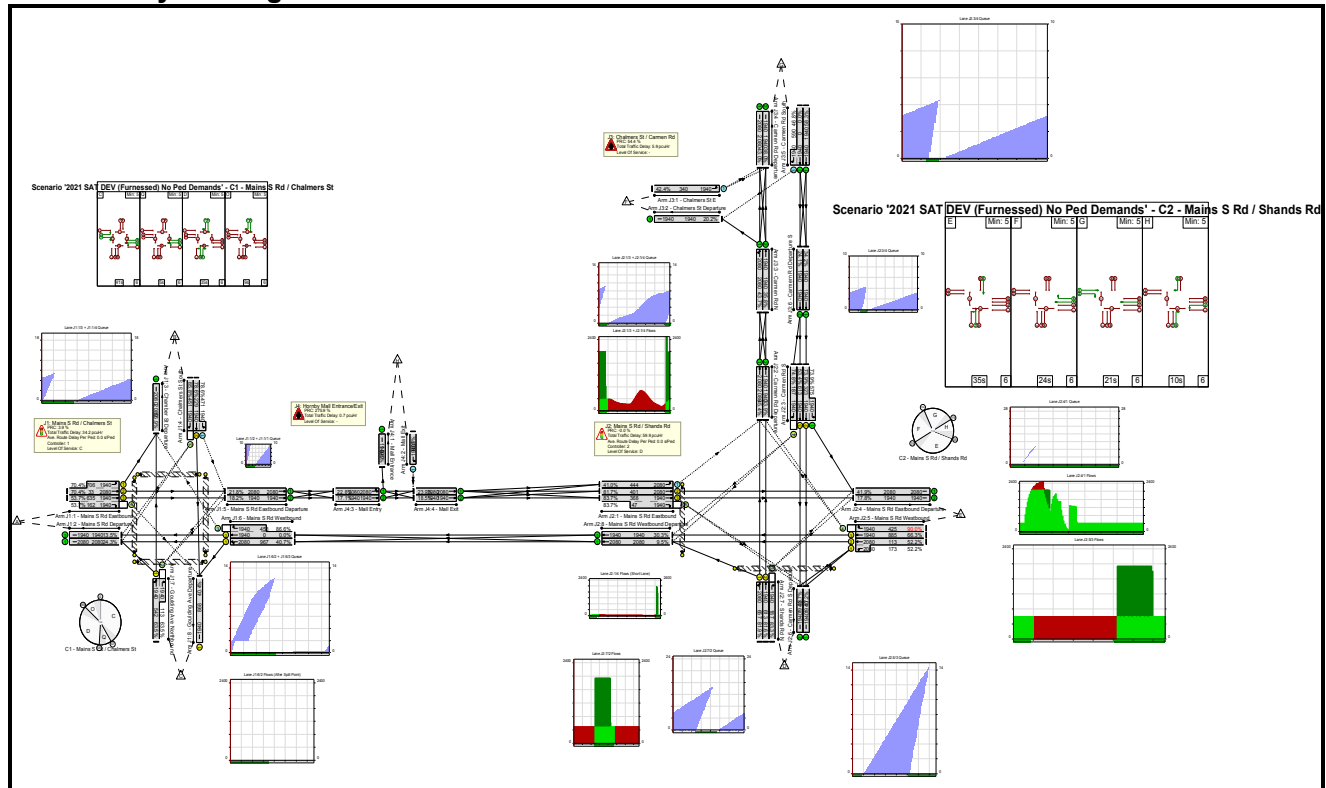
Appendix A

**Travel Time Matrix, Delay Per PCU  
Delay Per PCU :**

	A	B	C	D	E	F	G	H
A	0.0	54.1	79.2	0.0	104.7	0.0	56.0	36.0
B	71.4	0.0	40.6	88.8	92.9	0.0	0.0	0.0
C	47.5	48.4	0.0	0.0	104.5	0.0	59.7	47.5
D	0.0	0.0	0.0	0.0	102.6	55.4	55.8	0.0
E	39.2	84.6	71.5	62.1	0.0	83.4	83.8	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	30.5	0.0
G	106.1	0.0	119.5	43.0	13.7	28.1	0.0	0.0
H	0.0	0.0	0.0	67.9	74.4	0.0	21.6	0.0

**Scenario 16: '2021 SAT DEV (Furnished) No Ped Demands' (FG6: '2021 SAT Base + Dev', Plan 2: 'Plan 2 - No Ped Demands')**

**Network Layout Diagram**



Appendix A

**Network Results**

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	<b>90.0%</b>	<b>1537</b>	<b>1189</b>	<b>21</b>	<b>100.6</b>	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	<b>86.6%</b>	<b>867</b>	<b>432</b>	<b>9</b>	<b>34.2</b>	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	41	0	520	2080:1940	33+706	70.4 : 70.4%	-	-	-	5.6	38.5	14.7
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	41	-	428	1940:1940	635+162	53.7 : 53.7%	87	0	0	3.9	32.8	8.8
2/1	Mains S Rd Departure	U	-		-	-	-	505	2080	2080	24.3%	-	-	-	0.2	1.1	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	262	1940	1940	13.5%	-	-	-	0.1	1.1	0.1
3/1	Chamber St Departure	U	-		-	-	-	1163	2080	2080	55.9%	-	-	-	0.7	2.2	9.4
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	50	-	550	1940:1940	229+471	78.6 : 78.6%	305	65	0	3.4	22.5	9.6
4/3	Chalmers St South Right	O	C1:7		1	50	-	387	1940	451	85.8%	167	214	7	7.3	67.7	14.5
5/1	Mains S Rd Eastbound Departure Ahead	U	-		-	-	-	453	2080	2080	21.8%	-	-	-	0.1	1.1	0.1
5/2	Mains S Rd Eastbound Departure Ahead	U	-		-	-	-	353	1940	1940	18.2%	-	-	-	0.1	1.1	0.1
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	52	0	394	2080	967	40.7%	-	-	-	0.8	7.7	2.7
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	52	-	392	1940:1940	0+453	0.0 : 86.6%	236	153	3	5.2	47.8	15.2

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7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	35	0	416	1940:1940	542+113	63.5 : 63.5%	72	0	0	4.6	40.2	10.9
8/1	Goulding Ave Departure	U	C1:5		1	50	-	351	1940	868	40.4%	-	-	-	2.1	21.5	8.6
Ped Link: P1	Mains S Rd	-	C1:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Chalmers St Crossing	-	C1:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P4	Goulding Ave	-	C1:9		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>90.0%</b>	<b>131</b>	<b>757</b>	<b>12</b>	<b>59.9</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	182	2080	444	41.0%	92	90	0	0.6	12.2	3.7
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	21	-	328	2080	401	81.7%	-	-	-	6.1	66.9	11.9
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	21	-	347	1940:1940	368+47	83.7 : 83.7%	39	0	0	6.6	68.2	11.7
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	945	2080	2080	45.4%	-	-	-	0.5	1.9	9.7
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	658	1940	1940	33.9%	-	-	-	0.3	1.4	0.3
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	35	-	664	1940:1940	323+575	73.9 : 73.9%	-	-	-	3.5	19.2	9.7
3/3	Carmen Rd S Ahead	U	C2:6		1	35	-	327	1940	613	53.4%	-	-	-	3.5	38.4	9.0
3/4	Carmen Rd S Right	O	C2:8		1	10	-	140	1940	187	74.8%	0	138	2	3.4	86.2	5.7
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	872	2080	2080	41.9%	-	-	-	0.4	1.7	9.9

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4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	-	345	1940	1940	17.8%	-	-	-	0.1	1.1	0.1
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	51:10	0	149	2080:2080	113+173	52.2 : 52.2%	-	-	-	2.0	49.3	3.2
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	51	-	587	1940	885	66.3%	-	-	-	4.9	30.2	15.3
5/4	Mains S Rd Westbound Right	O	C2:5		1	24	-	383	1940	425	90.0%	0	376	7	8.4	79.2	15.5
6/1	Carmen Rd S Departure	U	-		-	-	-	333	1940	1940	17.2%	-	-	-	0.1	1.1	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	362	1940	1940	18.7%	-	-	-	0.1	1.1	0.1
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	35	0	538	2080	657	81.9%	-	-	-	7.6	50.6	17.9
7/2	Shands Rd N Ahead	U	C2:7		1	35	-	500	1940	613	81.6%	-	-	-	7.1	51.3	16.7
7/3	Shands Rd N Right	O	C2:9		1	10	-	156	1940	187	83.3%	0	153	3	4.4	101.2	7.0
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	198	2080	2080	9.5%	-	-	-	0.1	1.0	0.1
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	588	1940	1940	30.3%	-	-	-	0.2	1.3	0.2
Ped Link: P1	Shands Rd	-	C2:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Mains S Rd	-	C2:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>58.3%</b>	<b>420</b>	<b>0</b>	<b>0</b>	<b>5.9</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	144	1940	340	42.4%	144	0	0	1.2	29.0	3.4
2/1	Chalmers St Departure	U	-		-	-	-	391	1940	1940	20.2%	-	-	-	0.1	1.2	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	909	2080	2080	43.7%	-	-	-	0.4	1.5	0.4



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3/2	Carmen Rd N Ahead	U	-	-	-	-	694	1940	1940	35.8%	-	-	-	0.3	1.6	12.2
4/1	Carmen Rd Departure	U	-	-	-	-	895	2080	2080	43.0%	-	-	-	0.4	1.5	0.4
4/2	Carmen Rd Departure	U	-	-	-	-	737	1940	1940	38.0%	-	-	-	0.3	1.6	9.5
5/1	Carmen Rd South Ahead	U	-	-	-	-	1131	1940	1940	58.3%	-	-	-	0.7	2.2	0.7
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	276	1940:1940	0+590	0.0 : 46.8%	276	0	0	2.1	27.1	6.5
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	664	1940	1940	34.2%	-	-	-	0.3	1.4	0.3
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	467	1940	1940	24.1%	-	-	-	0.2	1.2	0.2
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>23.9%</b>	<b>119</b>	<b>0</b>	<b>0</b>	<b>0.7</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	68	1940	1940	3.5%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	119	1940	635	18.7%	119	0	0	0.1	3.5	0.1
3/1	Mall Entry Left Ahead	U	-	-	-	-	474	2080	2080	22.8%	-	-	-	0.1	1.1	0.1
3/2	Mall Entry Ahead	U	-	-	-	-	332	1940	1940	17.1%	-	-	-	0.1	1.1	0.1
4/1	Mall Exit Ahead	U	-	-	-	-	498	2080	2080	23.9%	-	-	-	0.2	1.1	0.2
4/2	Mall Exit Ahead	U	-	-	-	-	359	1940	1940	18.5%	-	-	-	0.1	1.1	0.1
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		3.9		Total Delay for Signalled Lanes (pcuHr):		32.99		Cycle Time (s):		114				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		-0.0		Total Delay for Signalled Lanes (pcuHr):		57.51		Cycle Time (s):		114				
		PRC Over All Lanes (%):		-0.0		Total Delay Over All Lanes(pcuHr):		100.62								

Appendix A

**Network Summary**

Controller	Stream	PRC (%)	Total Delay for stream (pcuHr)
C1 - Mains S Rd / Chalmers St	1	3.92	32.99
C2 - Mains S Rd / Shands Rd	1	-0.03	57.51
<b>Total Network Delay:</b> 100.62 pcuHr			
<b>Worst PRC:</b> -0.03 % (On Lane J2:5/4 in Stream 1)			
<b>Level Of Service:</b> D			

Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead	Inf	78.7 %	2080	2080
				Arm J1:8 Left	Inf	21.3 %		
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	0.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
				Arm J1:2 Left	Inf	20.3 %		
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:3 Ahead	Inf	79.7 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

Appendix A

Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead	Inf	100.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:8 Left	Inf	0.0 %		
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

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J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	12.7 % 87.3 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	0.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

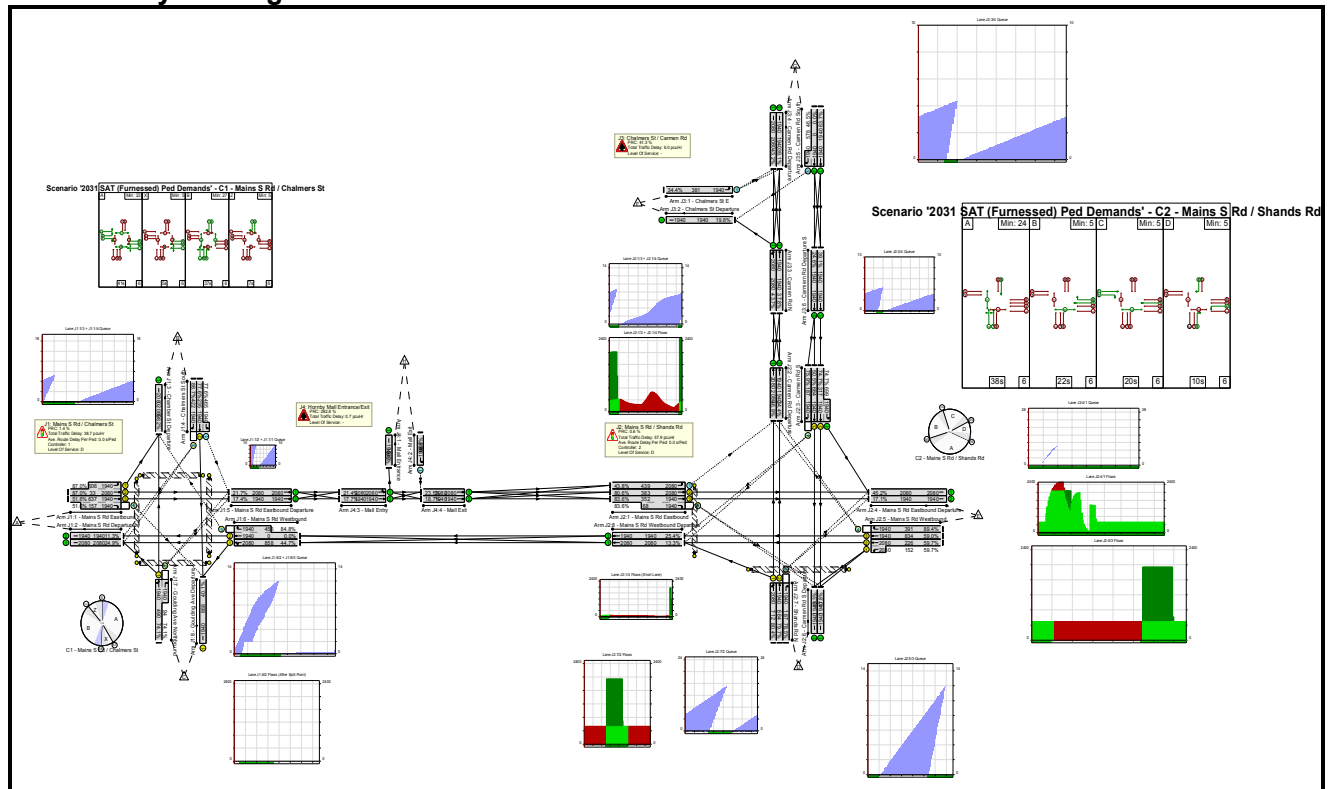
Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	14.3 % 85.7 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

Appendix A

**Travel Time Matrix, Delay Per PCU  
Delay Per PCU :**

	A	B	C	D	E	F	G	H
A	0.0	41.0	79.2	0.0	104.2	0.0	55.6	35.7
B	68.8	0.0	40.6	90.1	92.9	0.0	0.0	0.0
C	41.2	42.0	0.0	0.0	94.3	0.0	56.0	44.0
D	0.0	0.0	0.0	0.0	102.6	55.4	55.8	0.0
E	37.6	81.6	69.3	62.9	0.0	83.4	83.8	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	30.5	0.0
G	104.4	0.0	118.4	43.0	13.7	28.2	0.0	0.0
H	0.0	0.0	0.0	68.8	74.3	0.0	21.5	0.0

**Scenario 17: '2031 SAT (Furnished) Ped Demands' (FG9: '2031 SAT Base', Plan 1: 'Plan 1 - Ped Demands')  
Network Layout Diagram**



Appendix A

**Network Results**

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	89.4%	1433	1228	29	103.2	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	88.7%	743	511	18	38.7	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	41:35	35	556	2080:1940	33+606	87.0 : 87.0%	-	-	-	8.7	56.5	19.2
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	41	-	410	1940:1940	637+157	51.6 : 51.6%	27	54	0	3.6	31.4	8.4
2/1	Mains S Rd Departure	U	-		-	-	-	518	2080	2080	24.9%	-	-	-	0.2	1.2	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	220	1940	1940	11.3%	-	-	-	0.1	1.0	0.1
3/1	Chamber St Departure	U	-		-	-	-	1210	2080	2080	58.2%	-	-	-	1.4	4.2	23.4
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	50	-	543	1940:1940	235+465	77.6 : 77.6%	304	57	0	3.3	22.1	9.4
4/3	Chalmers St South Right	O	C1:7		1	50	-	374	1940	422	88.7%	103	255	16	7.5	72.2	14.9
5/1	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	451	2080	2080	21.7%	-	-	-	0.1	1.1	0.1
5/2	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	338	1940	1940	17.4%	-	-	-	0.1	1.1	0.1
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	46	46	383	2080	858	44.7%	-	-	-	1.1	10.5	4.0
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	46	-	386	1940:1940	0+455	0.0 : 84.8%	239	145	3	4.7	43.7	14.6

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7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	31:37	31	433	1940:1940	490+94	74.1 : 74.1%	70	0	0	5.8	47.9	12.7
8/1	Goulding Ave Departure	U	C1:5		1	50	-	348	1940	868	40.1%	-	-	-	2.1	21.7	8.5
Ped Link: P1	Mains S Rd	-	C1:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Chalmers St Crossing	-	C1:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Goulding Ave	-	C1:9		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>89.4%</b>	<b>159</b>	<b>717</b>	<b>11</b>	<b>57.9</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	192	2080	439	43.8%	102	90	0	0.8	14.5	4.4
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	20	-	309	2080	383	80.6%	-	-	-	5.7	66.7	11.2
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	20	-	351	1940:1940	352+68	83.6 : 83.6%	57	0	0	6.7	68.4	11.2
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	976	2080	2080	46.9%	-	-	-	0.5	1.9	9.3
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	667	1940	1940	34.4%	-	-	-	0.3	1.4	0.3
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	38	-	759	1940:1940	317+699	74.7 : 74.7%	-	-	-	3.4	16.1	9.4
3/3	Carmen Rd S Ahead	U	C2:6		1	38	-	335	1940	664	50.5%	-	-	-	3.3	35.3	8.9
3/4	Carmen Rd S Right	O	C2:8		1	10	-	142	1940	187	75.9%	0	140	2	3.5	87.6	5.9
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	940	2080	2080	45.2%	-	-	-	0.5	1.9	10.8



Appendix A

4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	-	332	1940	1940	17.1%	-	-	-	0.1	1.1	0.1
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	48:10	0	226	2080:2080	226+152	59.7 : 59.7%	-	-	-	2.7	43.1	3.4
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	48	-	492	1940	834	59.0%	-	-	-	4.1	30.1	12.6
5/4	Mains S Rd Westbound Right	O	C2:5		1	22	-	350	1940	391	89.4%	0	344	6	7.9	81.3	14.4
6/1	Carmen Rd S Departure	U	-		-	-	-	346	1940	1940	17.8%	-	-	-	0.1	1.1	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	374	1940	1940	19.3%	-	-	-	0.1	1.1	0.1
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	38	32	572	2080	712	80.4%	-	-	-	7.4	46.6	18.4
7/2	Shands Rd N Ahead	U	C2:7		1	38	-	529	1940	664	79.7%	-	-	-	6.9	46.9	17.0
7/3	Shands Rd N Right	O	C2:9		1	10	-	147	1940	187	78.5%	0	144	3	3.7	91.7	6.2
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	276	2080	2080	13.3%	-	-	-	0.1	1.0	0.1
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	493	1940	1940	25.4%	-	-	-	0.2	1.2	0.2
Ped Link: P1	Shands Rd	-	C2:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Mains S Rd	-	C2:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>63.7%</b>	<b>400</b>	<b>0</b>	<b>0</b>	<b>6.0</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	131	1940	381	34.4%	131	0	0	1.0	26.9	2.9
2/1	Chalmers St Departure	U	-		-	-	-	385	1940	1940	19.8%	-	-	-	0.1	1.2	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	909	2080	2080	43.7%	-	-	-	0.4	1.5	0.4

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3/2	Carmen Rd N Ahead	U	-	-	-	-	734	1940	1940	37.8%	-	-	-	0.4	1.7	12.8
4/1	Carmen Rd Departure	U	-	-	-	-	899	2080	2080	43.2%	-	-	-	0.4	1.5	0.4
4/2	Carmen Rd Departure	U	-	-	-	-	759	1940	1940	39.1%	-	-	-	0.3	1.5	0.3
5/1	Carmen Rd South Ahead	U	-	-	-	-	1236	1940	1940	63.7%	-	-	-	0.9	2.6	0.9
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	269	1940:1940	0+578	0.0 : 46.5%	269	0	0	2.1	27.6	6.3
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	759	1940	1940	39.1%	-	-	-	0.3	1.5	0.3
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	477	1940	1940	24.6%	-	-	-	0.2	1.2	0.2
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>23.5%</b>	<b>131</b>	<b>0</b>	<b>0</b>	<b>0.7</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	68	1940	1940	3.5%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	131	1940	666	19.7%	131	0	0	0.1	3.4	0.1
3/1	Mall Entry Left Ahead	U	-	-	-	-	446	2080	2080	21.4%	-	-	-	0.1	1.1	0.1
3/2	Mall Entry Ahead	U	-	-	-	-	343	1940	1940	17.7%	-	-	-	0.1	1.1	0.1
4/1	Mall Exit Ahead	U	-	-	-	-	489	2080	2080	23.5%	-	-	-	0.2	1.1	0.2
4/2	Mall Exit Ahead	U	-	-	-	-	363	1940	1940	18.7%	-	-	-	0.1	1.1	0.1
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		1.4		Total Delay for Signalled Lanes (pcuHr):		36.78		Cycle Time (s):		114				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		0.6		Total Delay for Signalled Lanes (pcuHr):		55.29		Cycle Time (s):		114				
		PRC Over All Lanes (%):		0.6		Total Delay Over All Lanes(pcuHr):		103.20								

## Appendix A

**Network Summary**

<b>Controller</b>	<b>Stream</b>	<b>PRC (%)</b>	<b>Total Delay for stream (pcuHr)</b>
C1 - Mains S Rd / Chalmers St	1	1.45	36.78
C2 - Mains S Rd / Shands Rd	1	0.65	55.29
<b>Total Network Delay:</b> 103.20 pcuHr			
<b>Worst PRC:</b> 0.65 % (On Lane J2:5/4 in Stream 1)			
<b>Level Of Service:</b> D			

Appendix A

**Lane Saturation Flows**

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead	Inf	77.8 %	2080	2080
				Arm J1:8 Left	Inf	22.2 %		
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	0.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
				Arm J1:2 Left	Inf	18.2 %		
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:3 Ahead	Inf	81.8 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

Appendix A

Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead	Inf	100.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:8 Left	Inf	0.0 %		
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

## Appendix A

J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	12.8 % 87.2 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	0.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	15.2 % 84.8 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

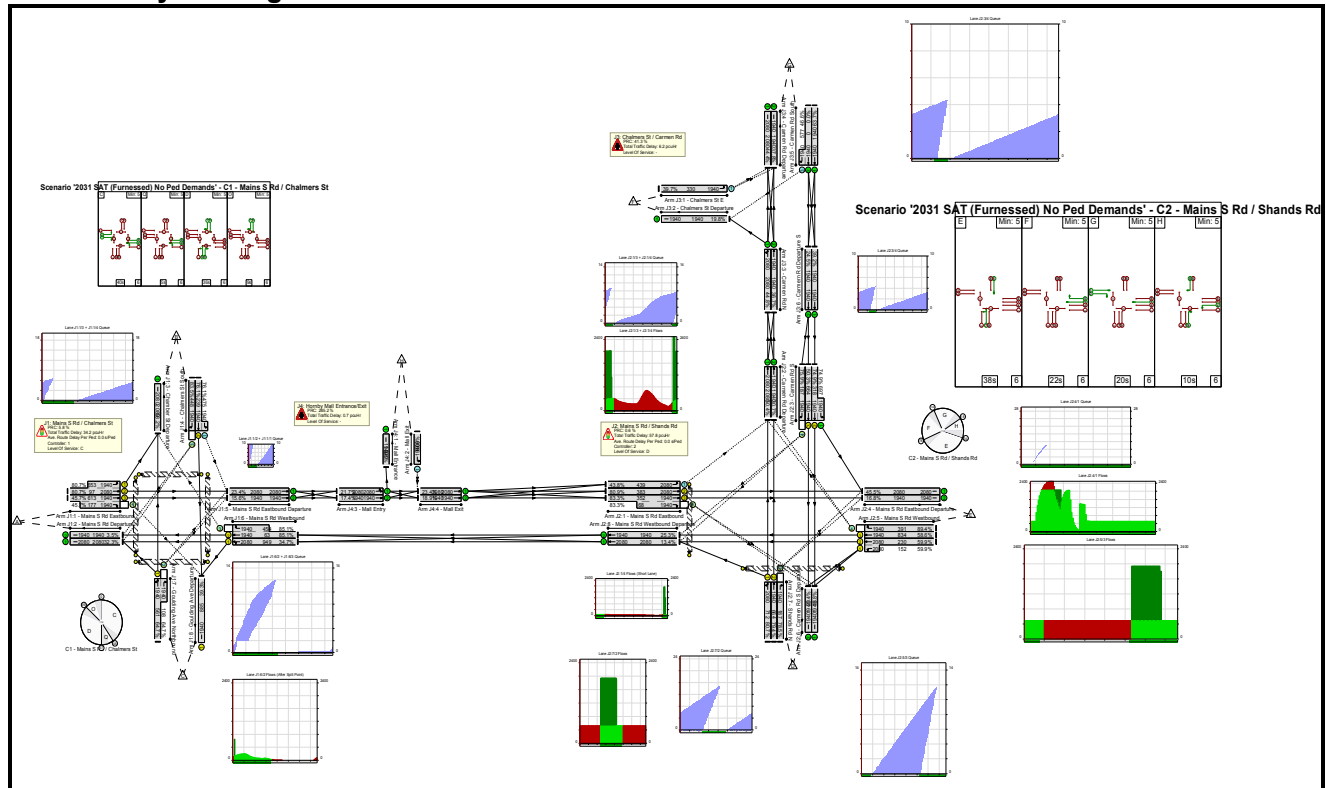
Appendix A

**Travel Time Matrix, Delay Per PCU  
Delay Per PCU :**

	A	B	C	D	E	F	G	H
A	0.0	61.1	78.6	0.0	105.7	0.0	61.7	35.2
B	73.3	0.0	39.8	88.6	91.5	0.0	0.0	0.0
C	49.3	50.2	0.0	0.0	106.1	0.0	61.9	49.3
D	0.0	0.0	0.0	0.0	93.1	51.1	51.6	0.0
E	39.3	81.2	68.5	61.5	0.0	85.6	85.9	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	28.4	0.0
G	110.3	0.0	124.2	40.3	13.2	28.7	0.0	0.0
H	0.0	0.0	0.0	69.6	74.5	0.0	23.1	0.0

**Scenario 18: '2031 SAT (Furnished) No Ped Demands' (FG9: '2031 SAT Base', Plan 2: 'Plan 2 - No Ped Demands')**

**Network Layout Diagram**



Appendix A

**Network Results**

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	89.4%	1539	1132	20	98.8	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	85.1%	849	414	9	34.2	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	40	0	605	2080:1940	97+653	80.7 : 80.7%	-	-	-	7.4	43.9	17.8
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	40	-	361	1940:1940	613+177	45.7 : 45.7%	81	0	0	3.2	32.1	7.0
2/1	Mains S Rd Departure	U	-		-	-	-	671	2080	2080	32.3%	-	-	-	0.2	1.3	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	67	1940	1940	3.5%	-	-	-	0.0	1.0	0.0
3/1	Chamber St Departure	U	-		-	-	-	1210	2080	2080	58.2%	-	-	-	0.9	2.7	15.9
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	51	-	543	1940:1940	239+475	76.1 : 76.1%	298	63	0	3.1	20.7	8.8
4/3	Chalmers St South Right	O	C1:7		1	51	-	374	1940	448	83.5%	163	204	7	6.7	64.6	13.6
5/1	Mains S Rd Eastbound Departure Ahead	U	-		-	-	-	487	2080	2080	23.4%	-	-	-	0.2	1.1	0.2
5/2	Mains S Rd Eastbound Departure Ahead	U	-		-	-	-	302	1940	1940	15.6%	-	-	-	0.1	1.1	0.1
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	51	0	329	2080	949	34.7%	-	-	-	0.8	8.2	2.3
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	51	-	440	1940:1940	63+454	85.1 : 85.1%	237	146	2	4.8	39.2	14.7



Appendix A

7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	36	0	433	1940:1940	561+108	64.7 : 64.7%	70	0	0	4.8	39.8	11.5
8/1	Goulding Ave Departure	U	C1:5		1	51	-	348	1940	885	39.3%	-	-	-	2.0	20.6	8.5
Ped Link: P1	Mains S Rd	-	C1:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Chalmers St Crossing	-	C1:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P4	Goulding Ave	-	C1:9		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>89.4%</b>	<b>158</b>	<b>718</b>	<b>11</b>	<b>57.8</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	192	2080	439	43.8%	101	91	0	0.7	13.8	4.3
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	20	-	310	2080	383	80.9%	-	-	-	5.7	66.7	11.3
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	20	-	350	1940:1940	352+68	83.3 : 83.3%	57	0	0	6.5	67.3	11.2
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	1048	2080	2080	50.4%	-	-	-	0.6	2.0	9.8
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	595	1940	1940	30.7%	-	-	-	0.2	1.3	0.2
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	38	-	760	1940:1940	318+697	74.9 : 74.9%	-	-	-	3.4	16.2	9.4
3/3	Carmen Rd S Ahead	U	C2:6		1	38	-	334	1940	664	50.3%	-	-	-	3.3	35.3	8.9
3/4	Carmen Rd S Right	O	C2:8		1	10	-	142	1940	187	75.9%	0	140	2	3.5	87.6	5.9
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	947	2080	2080	45.5%	-	-	-	0.5	1.9	10.9

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4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	-	325	1940	1940	16.8%	-	-	-	0.1	1.1	0.1
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	48:10	0	229	2080:2080	230+152	59.9 : 59.9%	-	-	-	2.7	42.9	3.4
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	48	-	489	1940	834	58.6%	-	-	-	4.1	30.0	12.4
5/4	Mains S Rd Westbound Right	O	C2:5		1	22	-	350	1940	391	89.4%	0	344	6	7.9	81.3	14.4
6/1	Carmen Rd S Departure	U	-		-	-	-	325	1940	1940	16.8%	-	-	-	0.1	1.1	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	395	1940	1940	20.4%	-	-	-	0.1	1.2	0.1
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	38	0	574	2080	712	80.7%	-	-	-	7.5	46.8	18.4
7/2	Shands Rd N Ahead	U	C2:7		1	38	-	527	1940	664	79.4%	-	-	-	6.8	46.7	16.8
7/3	Shands Rd N Right	O	C2:9		1	10	-	147	1940	187	78.5%	0	144	3	3.7	91.7	6.2
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	279	2080	2080	13.4%	-	-	-	0.1	1.0	0.1
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	490	1940	1940	25.3%	-	-	-	0.2	1.2	0.2
Ped Link: P1	Shands Rd	-	C2:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Mains S Rd	-	C2:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>63.7%</b>	<b>400</b>	<b>0</b>	<b>0</b>	<b>6.2</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	131	1940	330	39.7%	131	0	0	1.1	29.1	3.1
2/1	Chalmers St Departure	U	-		-	-	-	385	1940	1940	19.8%	-	-	-	0.1	1.2	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	931	2080	2080	44.8%	-	-	-	0.4	1.6	0.4

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3/2	Carmen Rd N Ahead	U	-	-	-	-	712	1940	1940	36.7%	-	-	-	0.5	2.3	16.0
4/1	Carmen Rd Departure	U	-	-	-	-	924	2080	2080	44.4%	-	-	-	0.4	1.6	0.4
4/2	Carmen Rd Departure	U	-	-	-	-	734	1940	1940	37.8%	-	-	-	0.3	1.5	10.0
5/1	Carmen Rd South Ahead	U	-	-	-	-	1236	1940	1940	63.7%	-	-	-	0.9	2.6	0.9
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	269	1940:1940	0+577	0.0 : 46.6%	269	0	0	2.1	27.8	6.4
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	760	1940	1940	39.2%	-	-	-	0.3	1.5	0.3
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	476	1940	1940	24.5%	-	-	-	0.2	1.2	0.2
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>23.4%</b>	<b>131</b>	<b>0</b>	<b>0</b>	<b>0.7</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	68	1940	1940	3.5%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	131	1940	669	19.6%	131	0	0	0.1	3.3	0.1
3/1	Mall Entry Left Ahead	U	-	-	-	-	452	2080	2080	21.7%	-	-	-	0.1	1.1	0.1
3/2	Mall Entry Ahead	U	-	-	-	-	337	1940	1940	17.4%	-	-	-	0.1	1.1	0.1
4/1	Mall Exit Ahead	U	-	-	-	-	486	2080	2080	23.4%	-	-	-	0.2	1.1	0.2
4/2	Mall Exit Ahead	U	-	-	-	-	366	1940	1940	18.9%	-	-	-	0.1	1.1	0.1
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		5.8		Total Delay for Signalled Lanes (pcuHr):		32.74		Cycle Time (s):		114				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		0.6		Total Delay for Signalled Lanes (pcuHr):		55.18		Cycle Time (s):		114				
		PRC Over All Lanes (%):		0.6		Total Delay Over All Lanes(pcuHr):		98.78								

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**Network Summary**

Controller	Stream	PRC (%)	Total Delay for stream (pcuHr)
C1 - Mains S Rd / Chalmers St	1	5.79	32.74
C2 - Mains S Rd / Shands Rd	1	0.65	55.18
<b>Total Network Delay:</b> 98.78 pcuHr			
<b>Worst PRC:</b> 0.65 % (On Lane J2:5/4 in Stream 1)			
<b>Level Of Service:</b> D			

## Appendix A

## Lane Saturation Flows

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead	Inf	74.2 %	2080	2080
				Arm J1:8 Left	Inf	25.8 %		
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	100.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
				Arm J1:2 Left	Inf	18.2 %		
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:3 Ahead	Inf	81.8 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

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Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead	Inf	100.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:8 Left	Inf	0.0 %		
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

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J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	12.5 % 87.5 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	0.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	15.0 % 85.0 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

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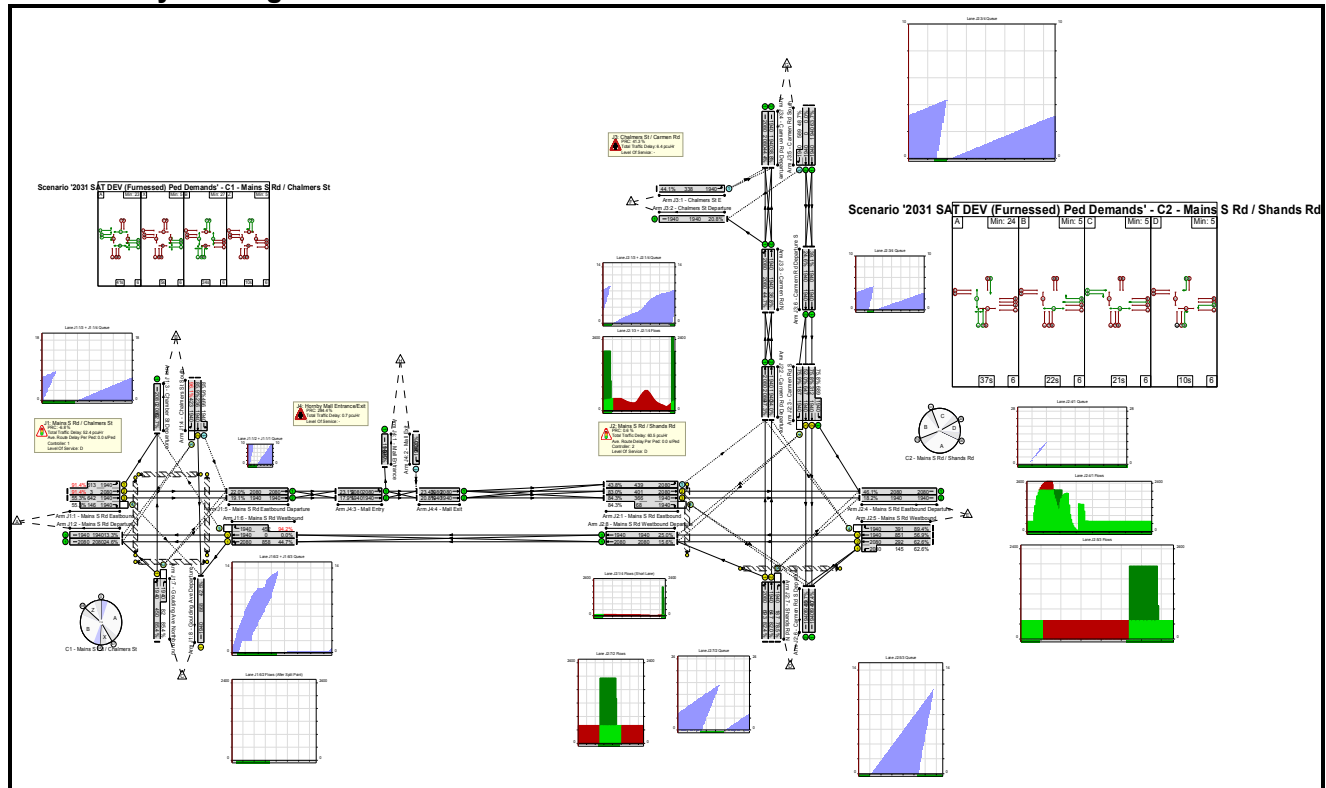
**Travel Time Matrix, Delay Per PCU**

**Delay Per PCU :**

	A	B	C	D	E	F	G	H
A	0.0	47.2	78.3	0.0	104.0	0.0	62.7	35.0
B	65.8	0.0	38.1	87.0	90.1	0.0	0.0	0.0
C	41.0	41.8	0.0	0.0	94.8	0.0	56.3	43.6
D	0.0	0.0	0.0	0.0	93.2	51.2	52.0	0.0
E	42.2	75.9	70.1	61.4	0.0	85.8	86.1	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	30.7	0.0
G	106.6	0.0	119.9	40.3	13.3	28.9	0.0	0.0
H	0.0	0.0	0.0	69.2	74.3	0.0	23.0	0.0

**Scenario 19: '2031 SAT DEV (Furnished) Ped Demands' (FG10: '2031 SAT Base + Dev', Plan 1: 'Plan 1 - Ped Demands')**

**Network Layout Diagram**





Appendix A

**Network Results**

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	96.1%	1413	1331	95	119.9	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	96.1%	687	612	83	52.4	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	41:35	35	563	2080:1940	3+613	91.4 : 91.4%	-	-	-	10.4	66.5	21.5
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	41	-	436	1940:1940	642+146	55.3 : 55.3%	27	54	0	3.9	32.2	9.3
2/1	Mains S Rd Departure	U	-		-	-	-	512	2080	2080	24.6%	-	-	-	0.2	1.1	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	258	1940	1940	13.3%	-	-	-	0.1	1.1	0.1
3/1	Chamber St Departure	U	-		-	-	-	1304	2080	2080	62.7%	-	-	-	1.8	4.9	25.4
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	50	-	603	1940:1940	236+466	85.9 : 85.9%	301	99	0	5.1	30.6	13.7
4/3	Chalmers St South Right	O	C1:7		1	50	-	406	1940	423	96.1%	53	306	47	11.4	100.8	19.4
5/1	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	458	2080	2080	22.0%	-	-	-	0.1	1.1	0.1
5/2	Mains S Rd Eastbound Daparture Ahead	U	-		-	-	-	370	1940	1940	19.1%	-	-	-	0.1	1.1	0.1
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	46	46	383	2080	858	44.7%	-	-	-	1.1	10.7	4.5
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	46	-	426	1940:1940	0+452	0.0 : 94.2%	236	153	37	8.3	70.1	19.0

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7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	28:34	28	454	1940:1940	450+82	85.4 : 85.4%	70	0	0	7.7	61.2	15.4
8/1	Goulding Ave Departure	U	C1:5		1	50	-	369	1940	868	42.5%	-	-	-	2.2	21.1	8.5
Ped Link: P1	Mains S Rd	-	C1:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Chalmers St Crossing	-	C1:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P4	Goulding Ave	-	C1:9		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>89.4%</b>	<b>158</b>	<b>719</b>	<b>11</b>	<b>60.5</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	192	2080	439	43.8%	101	91	0	0.8	15.0	4.5
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	21	-	333	2080	401	83.0%	-	-	-	6.5	70.8	12.3
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	21	-	366	1940:1940	366+68	84.3 : 84.3%	57	0	0	7.2	70.4	11.8
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	984	2080	2080	47.3%	-	-	-	0.5	1.9	9.8
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	659	1940	1940	34.0%	-	-	-	0.3	1.4	0.3
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	37	-	758	1940:1940	312+689	75.8 : 75.8%	-	-	-	3.5	16.7	9.7
3/3	Carmen Rd S Ahead	U	C2:6		1	37	-	336	1940	647	52.0%	-	-	-	3.4	36.4	9.0
3/4	Carmen Rd S Right	O	C2:8		1	10	-	142	1940	187	75.9%	0	140	2	3.5	87.6	5.9
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	958	2080	2080	46.1%	-	-	-	0.5	2.0	12.6

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4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	-	353	1940	1940	18.2%	-	-	-	0.1	1.1	0.1
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	49:10	0	274	2080:2080	292+145	62.6 : 62.6%	-	-	-	3.1	40.2	4.4
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	49	-	484	1940	851	56.9%	-	-	-	3.9	28.8	12.1
5/4	Mains S Rd Westbound Right	O	C2:5		1	22	-	350	1940	391	89.4%	0	344	6	7.9	81.3	14.4
6/1	Carmen Rd S Departure	U	-		-	-	-	338	1940	1940	17.4%	-	-	-	0.1	1.1	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	382	1940	1940	19.7%	-	-	-	0.1	1.2	0.1
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	37	31	571	2080	693	82.4%	-	-	-	7.8	49.1	18.7
7/2	Shands Rd N Ahead	U	C2:7		1	37	-	530	1940	647	82.0%	-	-	-	7.3	49.7	17.5
7/3	Shands Rd N Right	O	C2:9		1	10	-	147	1940	187	78.5%	0	144	3	3.7	91.7	6.2
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	324	2080	2080	15.6%	-	-	-	0.1	1.0	0.1
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	485	1940	1940	25.0%	-	-	-	0.2	1.2	0.2
Ped Link: P1	Shands Rd	-	C2:10		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Mains S Rd	-	C2:11		1	6	-	0	-	0	0.0%	-	-	-	-	-	-
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>63.7%</b>	<b>436</b>	<b>0</b>	<b>0</b>	<b>6.4</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	149	1940	338	44.1%	149	0	0	1.2	29.5	3.5
2/1	Chalmers St Departure	U	-		-	-	-	403	1940	1940	20.8%	-	-	-	0.1	1.2	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	929	2080	2080	44.7%	-	-	-	0.4	1.6	0.4

Appendix A

3/2	Carmen Rd N Ahead	U	-	-	-	-	714	1940	1940	36.8%	-	-	-	0.3	1.6	12.2
4/1	Carmen Rd Departure	U	-	-	-	-	924	2080	2080	44.4%	-	-	-	0.4	1.6	0.4
4/2	Carmen Rd Departure	U	-	-	-	-	752	1940	1940	38.8%	-	-	-	0.3	1.6	9.5
5/1	Carmen Rd South Ahead	U	-	-	-	-	1236	1940	1940	63.7%	-	-	-	0.9	2.6	0.9
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	287	1940:1940	0+589	0.0 : 48.7%	287	0	0	2.2	27.4	6.8
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	758	1940	1940	39.1%	-	-	-	0.3	1.5	0.3
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	478	1940	1940	24.6%	-	-	-	0.2	1.2	0.2
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>23.4%</b>	<b>131</b>	<b>0</b>	<b>0</b>	<b>0.7</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	68	1940	1940	3.5%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	131	1940	623	21.0%	131	0	0	0.1	3.7	0.1
3/1	Mall Entry Left Ahead	U	-	-	-	-	480	2080	2080	23.1%	-	-	-	0.1	1.1	0.1
3/2	Mall Entry Ahead	U	-	-	-	-	348	1940	1940	17.9%	-	-	-	0.1	1.1	0.1
4/1	Mall Exit Ahead	U	-	-	-	-	487	2080	2080	23.4%	-	-	-	0.2	1.1	0.2
4/2	Mall Exit Ahead	U	-	-	-	-	404	1940	1940	20.8%	-	-	-	0.1	1.2	0.1
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		-6.8		Total Delay for Signalled Lanes (pcuHr):		50.13		Cycle Time (s):		114				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		0.6		Total Delay for Signalled Lanes (pcuHr):		57.78		Cycle Time (s):		114				
		PRC Over All Lanes (%):		-6.8		Total Delay Over All Lanes(pcuHr):		119.93								

## Appendix A

**Network Summary**

<b>Controller</b>	<b>Stream</b>	<b>PRC (%)</b>	<b>Total Delay for stream (pcuHr)</b>
C1 - Mains S Rd / Chalmers St	1	-6.76	50.13
C2 - Mains S Rd / Shands Rd	1	0.65	57.78
<b>Total Network Delay:</b> 119.93 pcuHr			
<b>Worst PRC:</b> -6.76 % (On Lane J1:4/3 in Stream 1)			
<b>Level Of Service:</b> D			

## Appendix A

## Lane Saturation Flows

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead	Inf	77.8 %	2080	2080
				Arm J1:8 Left	Inf	22.2 %		
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	0.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
				Arm J1:2 Left	Inf	17.2 %		
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:3 Ahead	Inf	82.8 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

Appendix A

Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead	Inf	100.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:8 Left	Inf	0.0 %		
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080

## Appendix A

J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	12.5 % 87.5 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	0.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	14.2 % 85.8 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940



Appendix A

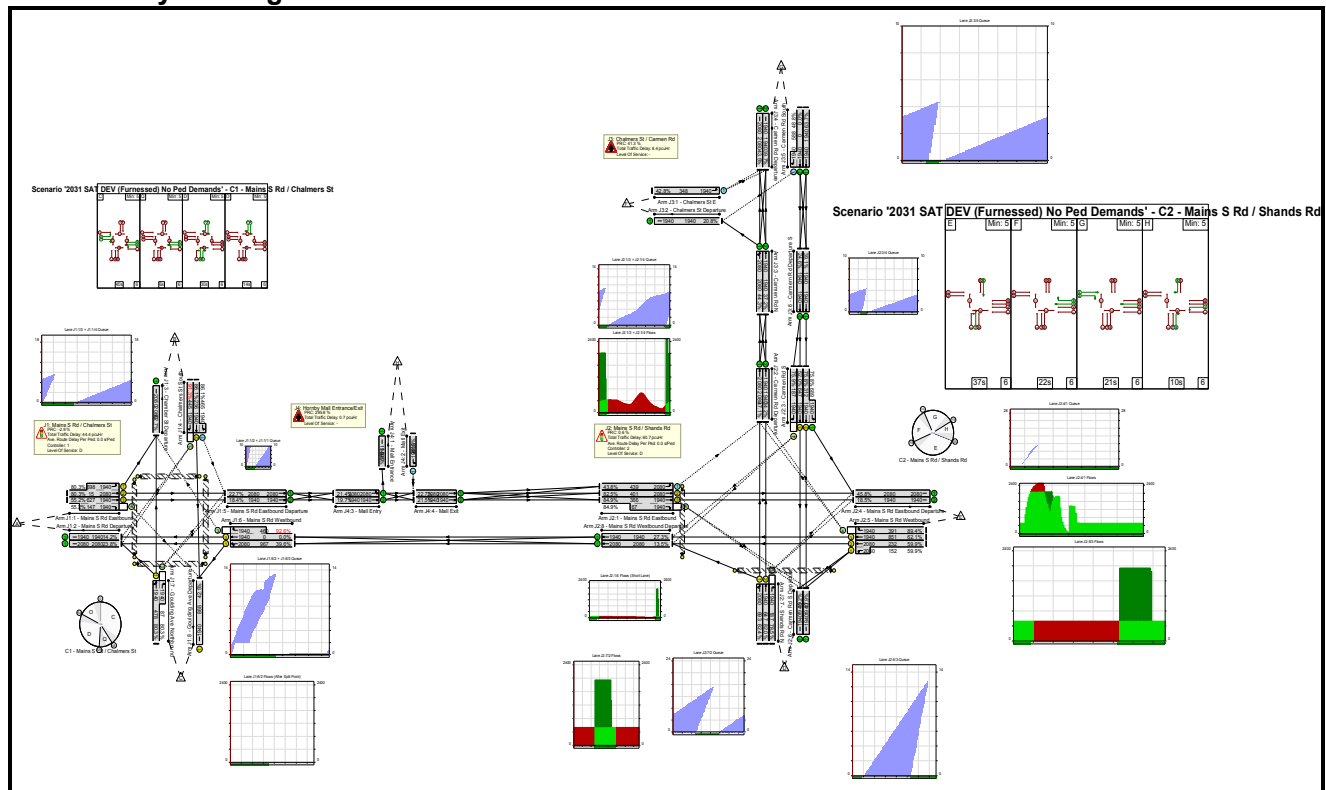
**Travel Time Matrix, Delay Per PCU**

**Delay Per PCU :**

	A	B	C	D	E	F	G	H
A	0.0	71.3	79.2	0.0	106.9	0.0	59.7	36.2
B	101.9	0.0	46.9	101.4	105.4	0.0	0.0	0.0
C	62.7	63.8	0.0	0.0	122.3	0.0	75.4	62.8
D	0.0	0.0	0.0	0.0	93.1	53.8	54.3	0.0
E	38.4	107.9	68.1	60.7	0.0	85.6	86.0	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	31.1	0.0
G	110.4	0.0	124.5	41.4	13.7	28.6	0.0	0.0
H	0.0	0.0	0.0	69.5	75.8	0.0	23.9	0.0

**Scenario 20: '2031 SAT DEV (Furnished) No Ped Demands' (FG10: '2031 SAT Base + Dev', Plan 2: 'Plan 2 - No Ped Demands')**

**Network Layout Diagram**



Appendix A

**Network Results**

Item	Lane Description	Lane Type	Full SGroup	Arrow SGroup	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In SGroup Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
<b>Network</b>	-	-	-		-	-	-	-	-	-	<b>92.6%</b>	<b>1452</b>	<b>1321</b>	<b>65</b>	<b>112.2</b>	-	-
<b>J1: Mains S Rd / Chalmers St</b>	-	-	-		-	-	-	-	-	-	<b>92.6%</b>	<b>728</b>	<b>601</b>	<b>54</b>	<b>44.4</b>	-	-
1/2+1/1	Mains S Rd Eastbound Left Ahead	U	C1:1 C1:3	C1:13	1	40	0	572	2080:1940	15+698	80.3 : 80.3%	-	-	-	7.2	45.2	18.0
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C1:1		1	40	-	427	1940:1940	627+147	55.2 : 55.2%	81	0	0	4.0	33.9	9.1
2/1	Mains S Rd Departure	U	-		-	-	-	495	2080	2080	23.8%	-	-	-	0.2	1.1	0.2
2/2	Mains S Rd Departure	U	-		-	-	-	275	1940	1940	14.2%	-	-	-	0.1	1.1	0.1
3/1	Chamber St Departure	U	-		-	-	-	1304	2080	2080	62.7%	-	-	-	1.1	3.1	16.5
4/2+4/1	Chalmers St South Left Ahead	U+O	C1:5 -		1	50	-	603	1940:1940	236+465	86.1 : 86.1%	275	125	0	5.2	31.0	13.9
4/3	Chalmers St South Right	O	C1:7		1	50	-	406	1940	445	<b>91.3%</b>	75	306	24	9.3	82.2	16.8
5/1	Mains S Rd Eastbound Departure Ahead	U	-		-	-	-	472	2080	2080	22.7%	-	-	-	0.1	1.1	0.1
5/2	Mains S Rd Eastbound Departure Ahead	U	-		-	-	-	356	1940	1940	18.4%	-	-	-	0.1	1.1	0.1
6/1	Mains S Rd Westbound Ahead Left	U	C1:2	C1:14	1	52	0	383	2080	967	39.6%	-	-	-	0.8	7.7	2.3
6/2+6/3	Mains S Rd Westbound Ahead Right	U+O	C1:2 C1:4		1	52	-	426	1940:1940	0+460	<b>0.0 : 92.6%</b>	227	170	29	7.5	63.1	18.2

Appendix A

7/1+7/2	Goulding Ave Northbound Left Ahead Right	U+O	C1:6 C1:8	C1:15	1	30	0	454	1940:1940	478+87	80.3 : 80.3%	70	0	0	6.8	53.6	14.3
8/1	Goulding Ave Departure	U	C1:5		1	50	-	369	1940	868	42.5%	-	-	-	2.1	20.4	8.5
Ped Link: P1	Mains S Rd	-	C1:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Chalmers St Crossing	-	C1:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P3	Mains S Rd Eastbound	-	C1:12		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P4	Goulding Ave	-	C1:9		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J2: Mains S Rd / Shands Rd</b>	-	-	-		-	-	-	-	-	-	<b>89.4%</b>	<b>157</b>	<b>719</b>	<b>11</b>	<b>60.7</b>	-	-
1/1	Mains S Rd Eastbound Left	O	-		-	-	-	192	2080	439	43.8%	100	92	0	0.8	14.6	4.5
1/2	Mains S Rd Eastbound Ahead	U	C2:1		1	21	-	331	2080	401	82.5%	-	-	-	6.4	70.0	12.2
1/3+1/4	Mains S Rd Eastbound Ahead Right	U+O	C2:1 C2:3		1	21	-	368	1940:1940	366+67	84.9 : 84.9%	57	0	0	7.3	71.6	12.0
2/1	Carmen Rd Departure Ahead	U	-		-	-	-	979	2080	2080	47.1%	-	-	-	0.5	1.9	9.8
2/2	Carmen Rd Departure Ahead	U	-		-	-	-	664	1940	1940	34.2%	-	-	-	0.3	1.4	0.3
3/2+3/1	Carmen Rd S Left Ahead	U	C2:6 -		1	37	-	758	1940:1940	312+689	75.8 : 75.8%	-	-	-	3.5	16.7	9.7
3/3	Carmen Rd S Ahead	U	C2:6		1	37	-	336	1940	647	52.0%	-	-	-	3.4	36.4	9.0
3/4	Carmen Rd S Right	O	C2:8		1	10	-	142	1940	187	75.9%	0	140	2	3.5	87.6	5.9
4/1	Mains S Rd Eastbound Departure	U	-		-	-	-	952	2080	2080	45.8%	-	-	-	0.5	2.0	12.1

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4/2	Mains S Rd Eastbound Departure	U	-	-	-	-	-	359	1940	1940	18.5%	-	-	-	0.1	1.1	0.1
5/2+5/1	Mains S Rd Westbound Left Ahead	U	C2:2 C2:4	C2:13	1	49:10	0	230	2080:2080	232+152	59.9 : 59.9%	-	-	-	2.7	42.5	3.4
5/3	Mains S Rd Westbound Ahead	U	C2:2		1	49	-	528	1940	851	62.1%	-	-	-	4.4	30.2	13.6
5/4	Mains S Rd Westbound Right	O	C2:5		1	22	-	350	1940	391	89.4%	0	344	6	7.9	81.3	14.4
6/1	Carmen Rd S Departure	U	-		-	-	-	348	1940	1940	17.9%	-	-	-	0.1	1.1	0.1
6/2	Carmen Rd S Departure	U	-		-	-	-	372	1940	1940	19.2%	-	-	-	0.1	1.1	0.1
7/1	Shands Rd N Ahead Left	U	C2:7	C2:12	1	37	0	571	2080	693	82.4%	-	-	-	7.8	49.1	18.7
7/2	Shands Rd N Ahead	U	C2:7		1	37	-	530	1940	647	82.0%	-	-	-	7.3	49.7	17.5
7/3	Shands Rd N Right	O	C2:9		1	10	-	147	1940	187	78.5%	0	144	3	3.7	91.7	6.2
8/1	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	280	2080	2080	13.5%	-	-	-	0.1	1.0	0.1
8/2	Mains S Rd Westbound Departure Ahead	U	-		-	-	-	529	1940	1940	27.3%	-	-	-	0.2	1.3	0.2
Ped Link: P1	Shands Rd	-	C2:10		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
Ped Link: P2	Mains S Rd	-	C2:11		0	0	-	0	-	0	0.0%	-	-	-	Inf	Inf	Inf
<b>J3: Chalmers St / Carmen Rd</b>	-	-	-		-	-	-	-	-	-	<b>63.7%</b>	<b>436</b>	<b>0</b>	<b>0</b>	<b>6.4</b>	-	-
1/1	Chalmers St E Left	O	-		-	-	-	149	1940	348	42.8%	149	0	0	1.2	29.0	3.5
2/1	Chalmers St Departure	U	-		-	-	-	403	1940	1940	20.8%	-	-	-	0.1	1.2	0.1
3/1	Carmen Rd N Left Ahead	U	-		-	-	-	922	2080	2080	44.3%	-	-	-	0.4	1.6	0.4

Appendix A

3/2	Carmen Rd N Ahead	U	-	-	-	-	721	1940	1940	37.2%	-	-	-	0.4	1.8	13.8
4/1	Carmen Rd Departure	U	-	-	-	-	905	2080	2080	43.5%	-	-	-	0.4	1.5	0.4
4/2	Carmen Rd Departure	U	-	-	-	-	771	1940	1940	39.7%	-	-	-	0.3	1.5	1.4
5/1	Carmen Rd South Ahead	U	-	-	-	-	1236	1940	1940	63.7%	-	-	-	0.9	2.6	0.9
5/2+5/3	Carmen Rd South Right Ahead	U+O	-	-	-	-	287	1940:1940	0+588	0.0 : 48.8%	287	0	0	2.2	27.6	6.9
6/1	Carmern Rd Departure S Ahead	U	-	-	-	-	758	1940	1940	39.1%	-	-	-	0.3	1.5	0.3
6/2	Carmern Rd Departure S Ahead	U	-	-	-	-	478	1940	1940	24.6%	-	-	-	0.2	1.2	0.2
<b>J4: Hornby Mall Entrance/Exit</b>	-	-	-	-	-	-	-	-	-	<b>22.7%</b>	<b>131</b>	<b>0</b>	<b>0</b>	<b>0.7</b>	-	-
1/1	Mall Entrance	U	-	-	-	-	68	1940	1940	3.5%	-	-	-	0.0	1.0	0.0
2/1	Mall Exit Left	O	-	-	-	-	131	1940	616	21.3%	131	0	0	0.1	3.7	0.1
3/1	Mall Entry Left Ahead	U	-	-	-	-	445	2080	2080	21.4%	-	-	-	0.1	1.1	0.1
3/2	Mall Entry Ahead	U	-	-	-	-	383	1940	1940	19.7%	-	-	-	0.1	1.2	0.1
4/1	Mall Exit Ahead	U	-	-	-	-	473	2080	2080	22.7%	-	-	-	0.1	1.1	0.1
4/2	Mall Exit Ahead	U	-	-	-	-	418	1940	1940	21.5%	-	-	-	0.1	1.2	0.1
C1 - Mains S Rd / Chalmers St		PRC for Signalled Lanes (%):		-2.9		Total Delay for Signalled Lanes (pcuHr):		42.80		Cycle Time (s):		114				
C2 - Mains S Rd / Shands Rd		PRC for Signalled Lanes (%):		0.6		Total Delay for Signalled Lanes (pcuHr):		58.05		Cycle Time (s):		114				
		PRC Over All Lanes (%):		-2.9		Total Delay Over All Lanes(pcuHr):		112.22								

Appendix A

**Network Summary**

Controller	Stream	PRC (%)	Total Delay for stream (pcuHr)
C1 - Mains S Rd / Chalmers St	1	-2.90	42.80
C2 - Mains S Rd / Shands Rd	1	0.65	58.05
<b>Total Network Delay:</b> 112.22 pcuHr			
<b>Worst PRC:</b> -2.90 % (On Lane J1:6/2 in Stream 1)			
<b>Level Of Service:</b> D			

## Appendix A

## Lane Saturation Flows

Junction: J1: Mains S Rd / Chalmers St								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:3 Left	Inf	100.0 %	1940	1940
J1:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J1:5 Ahead	Inf	100.0 %	2080	2080
J1:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:5 Ahead	Inf	100.0 %	1940	1940
J1:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J1:8 Right	Inf	100.0 %	1940	1940
J1:2/1 (Mains S Rd Departure)	3.25	0.00	N				2080	2080
J1:2/2 (Mains S Rd Departure)	3.25	0.00	Y				1940	1940
J1:3/1 (Chamber St Departure)	3.25	0.00	N				2080	2080
J1:4/1 (Chalmers St South)	3.25	0.00	Y	Arm J1:5 Left	Inf	100.0 %	1940	1940
J1:4/2 (Chalmers St South)	3.25	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1940	1940
J1:4/3 (Chalmers St South)	3.25	0.00	Y	Arm J1:2 Right	Inf	100.0 %	1940	1940
J1:5/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N	Arm J4:3 Ahead	Inf	100.0 %	2080	2080
J1:5/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y	Arm J4:3 Ahead	Inf	100.0 %	1940	1940
J1:6/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J1:2 Ahead	Inf	77.8 %	2080	2080
				Arm J1:8 Left	Inf	22.2 %		
J1:6/2 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:2 Ahead	Inf	0.0 %	1940	1940
J1:6/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J1:3 Right	Inf	100.0 %	1940	1940
				Arm J1:2 Left	Inf	17.2 %		
J1:7/1 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:3 Ahead	Inf	82.8 %	1940	1940
J1:7/2 (Goulding Ave Northbound)	3.25	0.00	Y	Arm J1:5 Right	Inf	100.0 %	1940	1940
J1:8/1 (Goulding Ave Departure)	3.25	0.00	Y				1940	1940

Appendix A

Junction: J2: Mains S Rd / Shands Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/1 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:2 Left	Inf	100.0 %	2080	2080
J2:1/2 (Mains S Rd Eastbound)	3.25	0.00	N	Arm J2:4 Ahead	Inf	100.0 %	2080	2080
J2:1/3 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1940	1940
J2:1/4 (Mains S Rd Eastbound)	3.25	0.00	Y	Arm J2:6 Right	Inf	100.0 %	1940	1940
J2:2/1 (Carmen Rd Departure)	3.25	0.00	N	Arm J3:3 Ahead	Inf	100.0 %	2080	2080
J2:2/2 (Carmen Rd Departure)	3.25	0.00	Y	Arm J3:3 Ahead	Inf	100.0 %	1940	1940
J2:3/1 (Carmen Rd S)	3.25	0.00	Y	Arm J2:4 Left	Inf	100.0 %	1940	1940
J2:3/2 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/3 (Carmen Rd S)	3.25	0.00	Y	Arm J2:6 Ahead	Inf	100.0 %	1940	1940
J2:3/4 (Carmen Rd S)	3.25	0.00	Y	Arm J2:8 Right	Inf	100.0 %	1940	1940
J2:4/1 (Mains S Rd Eastbound Departure)	3.25	0.00	N				2080	2080
J2:4/2 (Mains S Rd Eastbound Departure)	3.25	0.00	Y				1940	1940
J2:5/1 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:6 Left	Inf	100.0 %	2080	2080
J2:5/2 (Mains S Rd Westbound)	3.25	0.00	N	Arm J2:8 Ahead	Inf	100.0 %	2080	2080
J2:5/3 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:8 Ahead	Inf	100.0 %	1940	1940
J2:5/4 (Mains S Rd Westbound)	3.25	0.00	Y	Arm J2:2 Right	Inf	100.0 %	1940	1940
J2:6/1 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:6/2 (Carmen Rd S Departure)	3.25	0.00	Y				1940	1940
J2:7/1 (Shands Rd N)	3.25	0.00	N	Arm J2:2 Ahead	Inf	100.0 %	2080	2080
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:8 Left	Inf	0.0 %		
J2:7/2 (Shands Rd N)	3.25	0.00	Y	Arm J2:2 Ahead	Inf	100.0 %	1940	1940
J2:7/3 (Shands Rd N)	3.25	0.00	Y	Arm J2:4 Right	Inf	100.0 %	1940	1940
J2:8/1 (Mains S Rd Westbound Departure)	3.25	0.00	N	Arm J1:6 Ahead	Inf	100.0 %	2080	2080



## Appendix A

J2:8/2 (Mains S Rd Westbound Departure)	3.25	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1940	1940
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Junction: J3: Chalmers St / Carmen Rd								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J3:1/1 (Chalmers St E)	3.25	0.00	Y	Arm J3:4 Left	Inf	100.0 %	1940	1940
J3:2/1 (Chalmers St Departure)	3.25	0.00	Y				1940	1940
J3:3/1 (Carmen Rd N)	3.25	0.00	N	Arm J3:2 Left Arm J3:4 Ahead	Inf Inf	12.6 % 87.4 %	2080	2080
J3:3/2 (Carmen Rd N)	3.25	0.00	Y	Arm J3:4 Ahead	Inf	100.0 %	1940	1940
J3:4/1 (Carmen Rd Departure)	3.25	0.00	N				2080	2080
J3:4/2 (Carmen Rd Departure)	3.25	0.00	Y				1940	1940
J3:5/1 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	100.0 %	1940	1940
J3:5/2 (Carmen Rd South)	3.25	0.00	Y	Arm J3:6 Ahead	Inf	0.0 %	1940	1940
J3:5/3 (Carmen Rd South)	3.25	0.00	Y	Arm J3:2 Right	Inf	100.0 %	1940	1940
J3:6/1 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940
J3:6/2 (Carmern Rd Departure S)	3.25	0.00	Y	Arm J2:3 Ahead	Inf	100.0 %	1940	1940

Junction: J4: Hornby Mall Entrance/Exit								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J4:1/1 (Mall Entrance)	3.25	0.00	Y				1940	1940
J4:2/1 (Mall Exit)	3.25	0.00	Y	Arm J4:4 Left	Inf	100.0 %	1940	1940
J4:3/1 (Mall Entry)	3.25	0.00	N	Arm J4:1 Left Arm J4:4 Ahead	Inf Inf	15.3 % 84.7 %	2080	2080
J4:3/2 (Mall Entry)	3.25	0.00	Y	Arm J4:4 Ahead	Inf	100.0 %	1940	1940
J4:4/1 (Mall Exit)	3.25	0.00	N	Arm J2:1 Ahead	Inf	100.0 %	2080	2080
J4:4/2 (Mall Exit)	3.25	0.00	Y	Arm J2:1 Ahead	Inf	100.0 %	1940	1940

Appendix A

**Travel Time Matrix, Delay Per PCU**

**Delay Per PCU :**

	A	B	C	D	E	F	G	H
A	0.0	48.6	80.5	0.0	107.4	0.0	60.1	36.8
B	83.3	0.0	47.2	103.7	106.8	0.0	0.0	0.0
C	54.7	55.9	0.0	0.0	108.5	0.0	69.8	57.3
D	0.0	0.0	0.0	0.0	93.1	53.8	54.4	0.0
E	37.5	98.2	68.7	61.4	0.0	85.6	86.0	0.0
F	0.0	0.0	0.0	0.0	0.0	0.0	30.5	0.0
G	106.3	0.0	120.4	41.4	13.7	28.7	0.0	0.0
H	0.0	0.0	0.0	70.3	75.9	0.0	23.8	0.0