

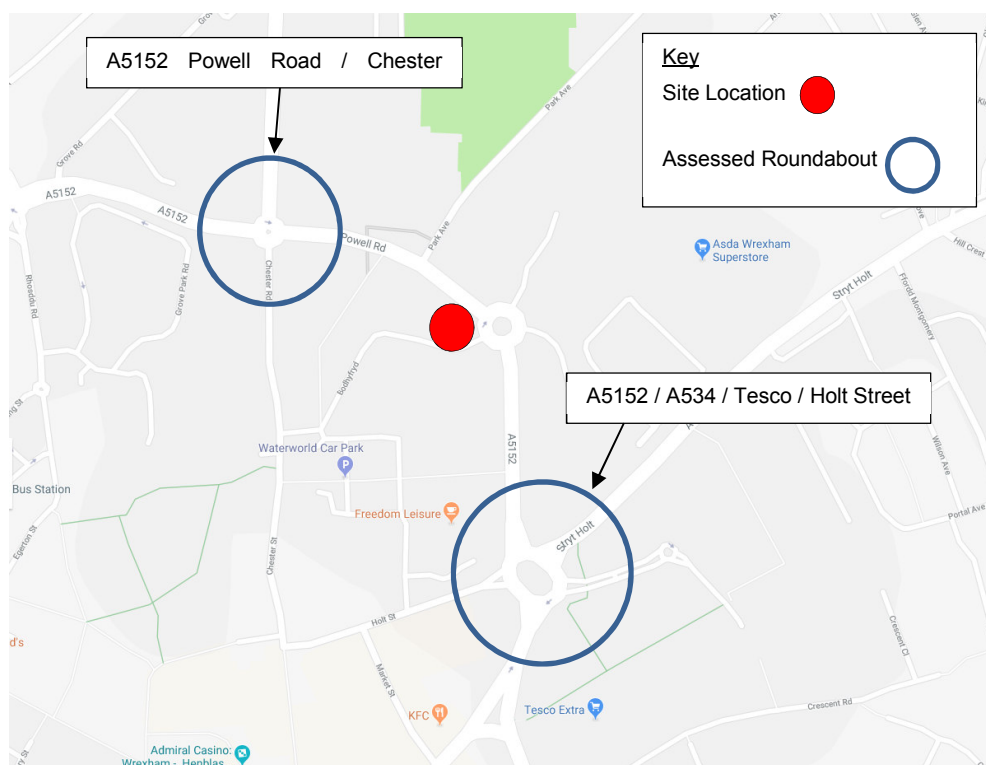
Project: Proposed Lidl Store
Site: Wrexham Police Station, Wrexham
Ref: AS/18111/TN02
Author: Anna Stephens
Approved: Jim Budd
Date: 19 December 2018

Introduction

1. This Technical Note has been written in response to highways comments received from Wrexham County Borough Council (WCBC) on the 16th November 2018 in relation to the application for the proposed redevelopment of Wrexham Police Station, Wrexham with a Lidl foodstore with associated car parking and a drive-thru.
2. During the consultation period, we have satisfied Wrexham Council with regard to the safety of the widened existing access onto the Asda roundabout, the layout of the drive-thru unit and the stacking capacity for vehicles at the order window and also with regard to the internal layout and issues concerning safe pedestrian routes across the car park and the movements of HGVs on and off the loading bay.
3. The only outstanding item to be resolved related to the consideration of any potential impact arising at the two neighbouring roundabout junctions of the A5152 Powell Road with the A5152 Chester Road to the west and the A5152 with the A534, Tesco, and Holt Street to the south east. After discussions concerning requirements for traffic counts it was agreed to provide additional capacity assessments for these junctions for the following periods:
 - Weekday 08:00-09:00 and 16:00-18:00
 - Saturday peak 13:00-14:00
4. Traffic counts were undertaken on Saturday 24th November and Thursday 29th November and this Technical Note seeks to demonstrate that the proposed development can be accommodated on these additional locations on the local highway network without detriment to the operational capacity of the local highway network. Each junction has been assessed using ARCADY to identify the effect of the proposed development traffic on queue length and delays.

5. An assessment of the roundabout at the site access with Powell Road, Alexandra C.P School, Asda, and the A5152 has already been undertaken within the submitted Transport Assessment. The ARCADY modelling demonstrated that the roundabout will work well within its practical capacity future assessment year of 2023 with the Lidl development. The ARCADY modelling showed that there was no threat to the free-flow of traffic at this location.
6. The additional roundabout junctions which have now been assessed lie to the north-west and the south-east of the site respectively. Their locations are shown in **Figure 1**.

Figure 1 – Location of assessed roundabouts



7. This Technical Note should be read in conjunction with the following drawings, diagrams and reports:-
 - Figure 1 – Chester Road/Powell Road roundabout layout at 1:500 scale;
 - Figure 2 – A5152/Holt Street/Tesco roundabout layout at 1:500 scale;
 - Figure 3 – 2018 Peak Hour Base Year Assessment Flows
 - Figure 4 – Development Traffic Flows

- Figure 5 – Base Plus Development Assessment Flows
- Appendix 1 – ARCADY Report for Powell Rd/Chester Rd roundabout;
- Appendix 2 – ARCADY Report for Holt Street/Tesco roundabout
- Appendix 3 – Raw Survey Data - Powell Rd/Chester Rd roundabout and
Holt Street/Tesco roundabout

8. Note that for the purpose of robust assessment of these off-site junctions we have not sought to differentiate between those trips that are genuinely new to the network and those which are already passing by the site or transferring from a neighbouring foodstore. Such adjustments, as we have already demonstrated in earlier correspondence with the LHA, result in an almost de-minimis level of impact in the peak hours.
9. The flows provided at Figure 4 are therefore added as extra-over to those at Figure 3 to provide the assessment flows at Figure 5. They are offered on a without-prejudice basis since in reality, particularly in locations such as these with established food retail offers within close proximity, such levels of additional traffic are unlikely to ever occur.
10. We have also provided no parallel assessments for these junctions under the level of traffic that could be generated by the site under its current or lawful use or attempted to net off employment trips from those generated by Lidl. Again, this reinforces the robustness of the exercise.

A5152 Powell Road / Chester Road

11. A summary of the results from the Arcady assessment is shown in **Table 1** below and they have been attached in full at **Appendix 1**. The peak hours were calculated to be 08:00 – 09:00 and 17:00 – 18:00 on weekdays and 13:00 – 14:00 on Saturdays.

Table 1 – ARCADY results

	AM				PM				Saturday			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
2018												
Arm 1	0.6	2.68	0.36	A	0.3	2.23	0.22	A	0.4	2.65	0.28	A
Arm 2	0.2	1.56	0.18	A	0.4	1.59	0.28	A	0.4	1.64	0.29	A
Arm 3	0.2	2.17	0.15	A	0.4	2.82	0.28	A	0.3	2.77	0.26	A
Arm 4	0.3	1.45	0.22	A	0.3	1.57	0.24	A	0.4	1.70	0.31	A
2018 with development												
Arm 1	0.6	2.73	0.37	A	0.3	2.29	0.23	A	0.4	2.79	0.30	A
Arm 2	0.2	1.58	0.18	A	0.4	1.62	0.29	A	0.5	1.71	0.31	A
Arm 3	0.2	2.19	0.15	A	0.4	2.91	0.29	A	0.4	2.92	0.27	A
Arm 4	0.3	1.46	0.23	A	0.3	1.60	0.25	A	0.5	1.76	0.33	A
2023 + Development												
Arm 1	0.7	2.95	0.40	A	0.3	2.41	0.25	A	0.5	3.02	0.33	A
Arm 2	0.3	1.64	0.20	A	0.5	1.69	0.32	A	0.5	1.79	0.34	A
Arm 3	0.2	2.28	0.16	A	0.5	3.15	0.32	A	0.4	3.17	0.30	A
Arm 4	0.3	1.51	0.25	A	0.4	1.66	0.27	A	0.5	1.85	0.35	A

Arms

Arm	Name	Description
1	A5152 Chester Road (north)	
2	Powell Road (east)	
3	Chester Road (south)	
4	A5152 Chester Road (west)	

12. **Table 1** demonstrates that all arms of the roundabout will work within capacity with the addition of development traffic at year of opening and beyond.
13. No ratio of flow to capacity exceeds 0.4 on any one arm and the impact of development traffic is negligible across the entire junction.

A5152 / A534 / Tesco / Holt Street Roundabout

14. A summary of results from the Arcady assessment is shown in **Table 2** and attached in full **Appendix 2**.

Table 2 – ARCADY results

	AM				PM				Saturday			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
2018												
Arm 1	0.5	2.73	0.33	A	0.7	3.38	0.41	A	2.0	6.62	0.67	A
Arm 2	0.9	5.09	0.47	A	0.7	4.91	0.42	A	2.1	11.75	0.68	B
Arm 3	0.3	3.61	0.22	A	0.5	3.98	0.35	A	3.1	12.55	0.76	B
Arm 4	0.4	3.78	0.28	A	0.9	5.42	0.49	A	2.9	13.70	0.75	B
Arm 5	0.2	5.02	0.13	A	0.6	8.29	0.37	A	1.5	20.84	0.61	C
2018 with development												
Arm 1	0.5	2.77	0.34	A	0.8	3.54	0.44	A	2.5	7.76	0.72	A
Arm 2	0.9	5.26	0.49	A	0.8	5.10	0.43	A	2.5	14.00	0.72	B
Arm 3	0.3	3.66	0.23	A	0.6	4.10	0.36	A	4.0	15.79	0.81	C
Arm 4	0.4	3.86	0.29	A	1.0	5.67	0.51	A	3.7	16.87	0.79	C
Arm 5	0.2	5.13	0.14	A	0.6	8.66	0.38	A	2.0	27.14	0.68	D
2023 + Development												
Arm 1	0.6	2.91	0.36	A	0.9	3.84	0.48	A	3.5	10.35	0.78	B
Arm 2	1.1	5.85	0.53	A	0.9	5.64	0.47	A	4.2	22.20	0.82	C
Arm 3	0.3	3.90	0.25	A	0.6	4.44	0.39	A	7.8	29.22	0.90	D
Arm 4	0.4	4.06	0.31	A	1.2	6.35	0.55	A	6.6	29.12	0.88	D
Arm 5	0.2	5.39	0.15	A	0.8	9.96	0.43	A	4.1	53.89	0.83	F

Arms

Arm	Name	Description
1	A5152 (N)	
2	A534	
3	Tesco	
4	A5152 (S)	
5	Holt Street	

15. **Table 2** demonstrates that the roundabout will continue to work within capacity during all weekday peak hours even with the additional development traffic added as extra-over to existing and with base 2018 flows growthed to 2023 using a factor of 1.070.

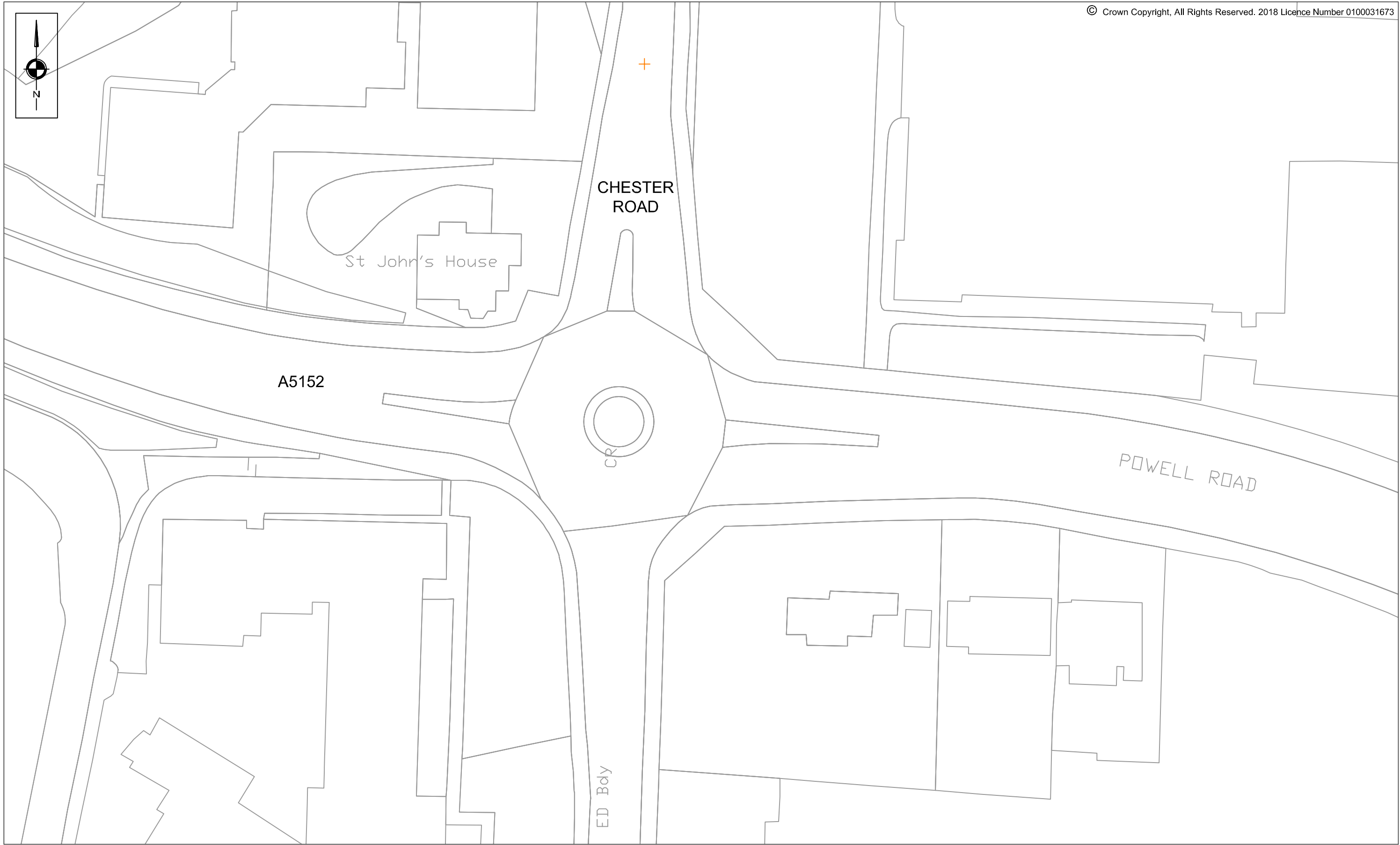
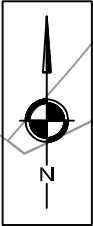
16. During a Saturday peak, there is some evidence that the level of service at the roundabout decreases and the Holt Street arm for example drops from a category C at 2018 with no development to a level F in 2023 with Lidl traffic added as extra over. In spite of the robustness of this exercise, the additional delay per PCU is still less than 30 seconds and the RFC on the Holt Street arm is just 0.83. The maximum RFC reported is 0.9 on the Tesco arm and this generates a queue of around 8 pcus.

Summary

17. This exercise demonstrates that the roundabout junctions either side of the application site will continue to work within capacity and that the level of additional traffic generated by Lidl's development proposals will have an insignificant impact on the overall level of service provided.
18. The A5152/A534/Tesco/Holt Street roundabout junction may experience a marginally reduced level of service during the Saturday peak hour but not to any significant degree and certainly not to the extent that would require mitigation. No problems are reported for either weekday peak period under the impact of traffic growth and additional development traffic.

S|C|P

FIGURES



S|C|P

Transportation Planning : Infrastructure Design

Colwyn Chambers, 19 York Street, Manchester, M2 3BA, Tel 0161 832 4400, www.scptransport.co.uk, Email info@scptransport.co.uk

Client	LIDL UK GmbH
Project Title	PROPOSED LIDL, WREXHAM POLICE STATION SITE, WREXHAM

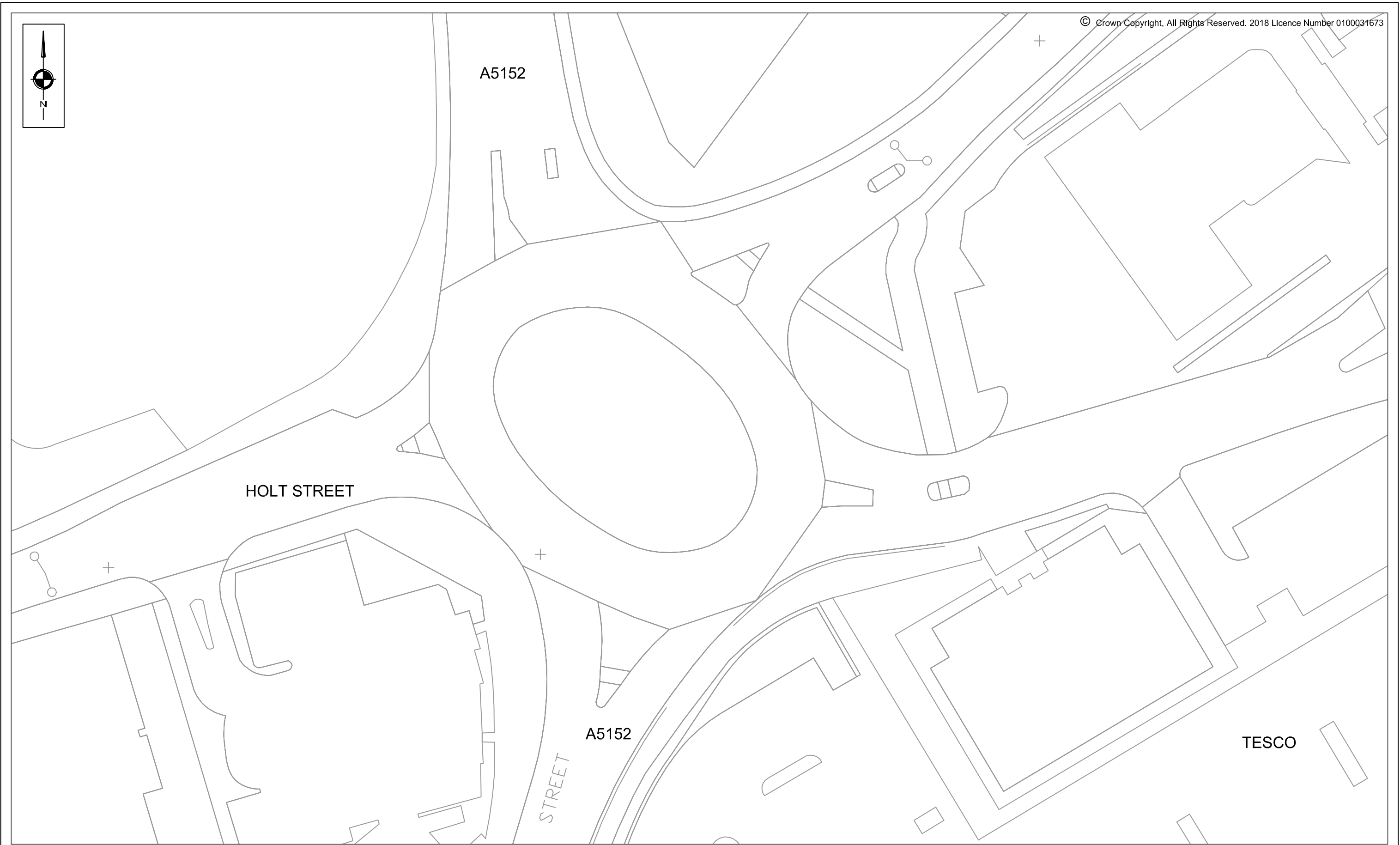
Drawing Title	CHESTER ROAD / POWELL ROAD ROUNDBOUT
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Scale	1:500 @ A3
Date	19.12.2018
Approved/ Unapproved	-

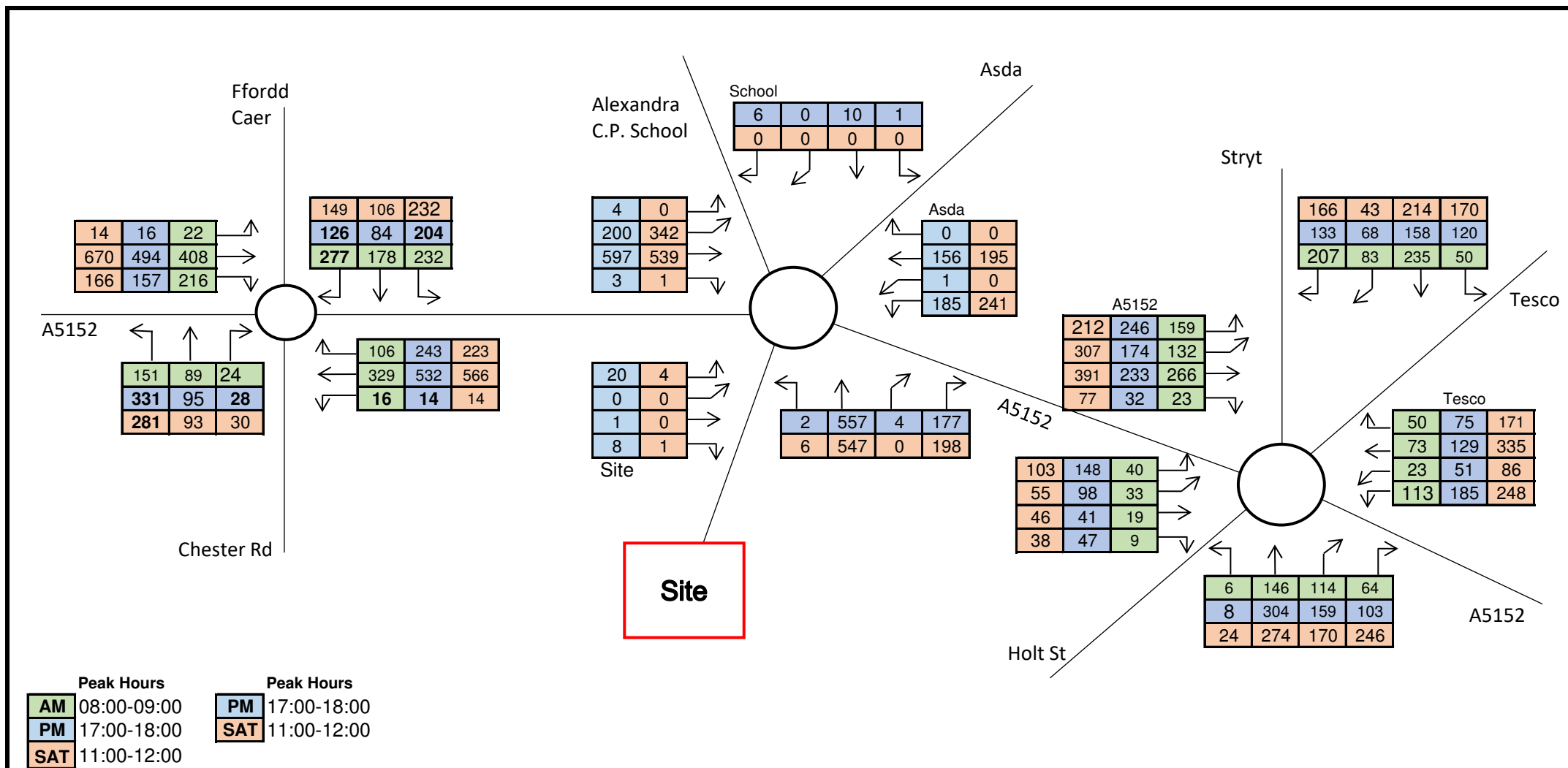
By	CAD
Checked	JRB
Status	PLANNING

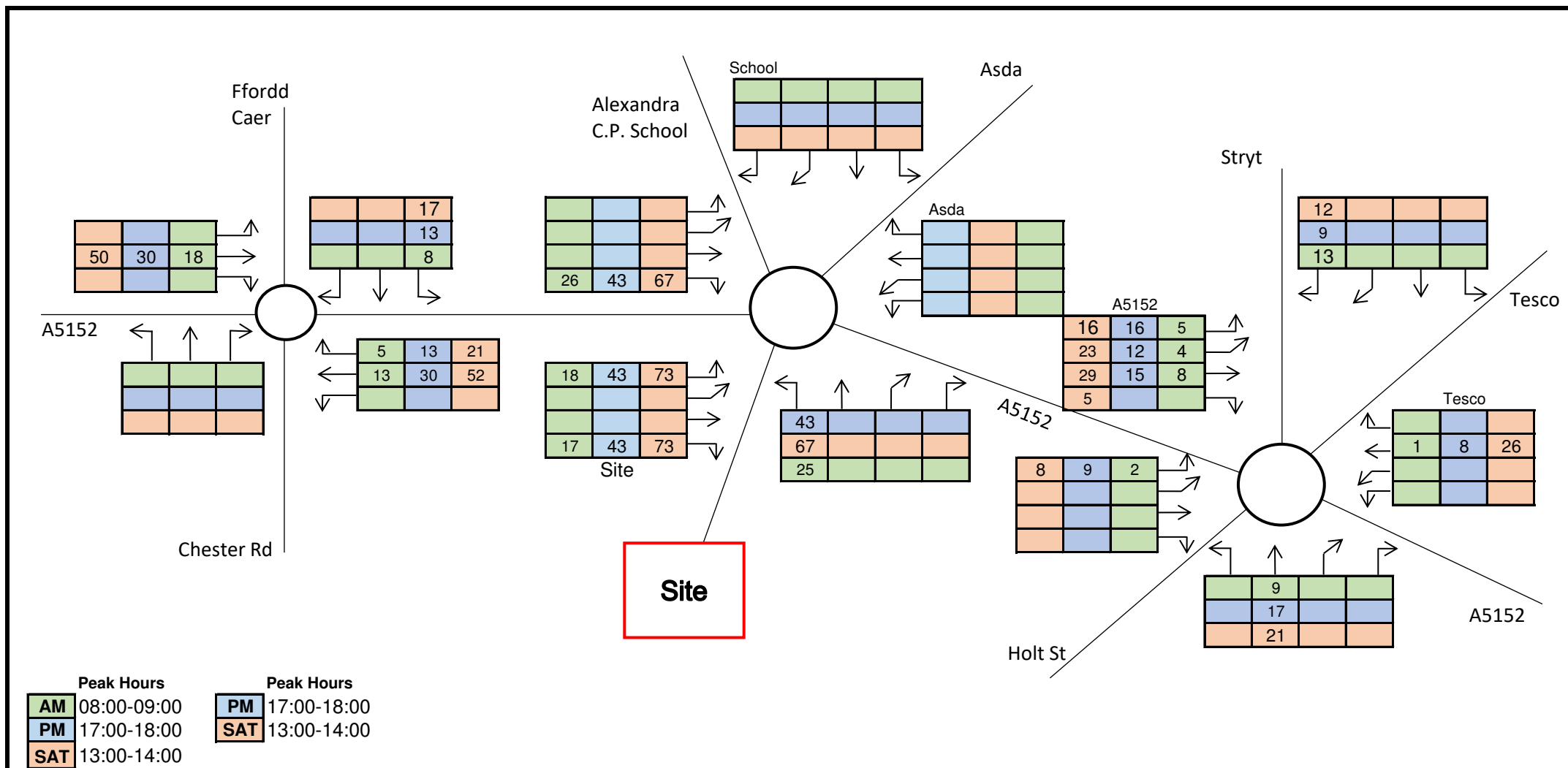
Rev	Description	Date	By
-	-	-	-
-	-	-	-
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Drawing No.	18111 FIGURE 1
Revision	-

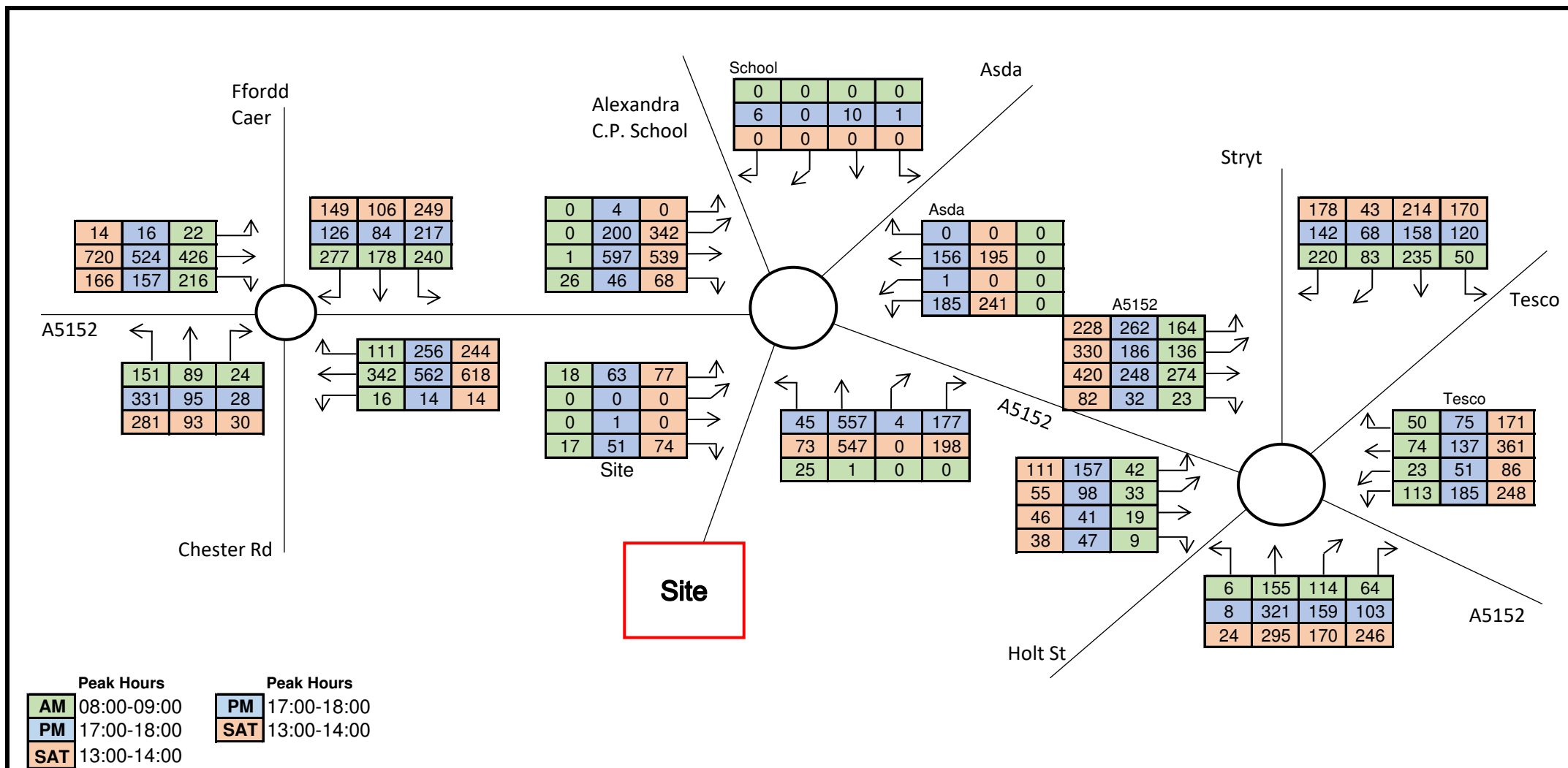


S C P Transportation Planning : Infrastructure Design Colwyn Chambers, 19 York Street, Manchester, M2 3BA, Tel 0161 832 4400, www.scptransport.co.uk, Email info@scptransport.co.uk	Client	LIDL UK GmbH	Drawing Title	HOLT STREET / TESCO ROUNDABOUT	Scale	1:500 @ A3	By	CAD	Rev	Description	Date	By	Drawing No.	
	Project Title	PROPOSED LIDL, WREXHAM POLICE STATION SITE, WREXHAM			Date	19.12.2018	Checked	JRB	-	-	-	-		
					Approved/Unapproved	-	Status	PLANNING	-	-	-	-		
									-	-	-	-		
													Revision	-





 Transportation Planning : Infrastructure Design	Development Traffic Assignment	19/12/2018	Job Number - SCP/18111
	Lidl Wrexham Police Station, Wrexham	Figure 4	



S|C|P

APPENDIX 1

Junctions 9												
ARCADY 9 - Roundabout Module												
Version: 9.5.0.6896 © Copyright TRL Limited, 2018												
For sales and distribution information, program advice and maintenance, contact TRL: +44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk												
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution												

Filename: Powell Road A5152 Roundabout v2.j9

Path: Z:\Job Library\2018\18111 - Lidl, Wrexham Police Station, Wrexham\Traffic Data\ARCADY

Report generation date: 19/12/2018 15:16:22

- »2018, AM
- »2018, PM
- »2018, Saturday
- »2018 with development, AM
- »2018 with development, PM
- »2018 with development, Saturday
- »2023 + Development, AM
- »2023 + Development, PM
- »2023 + Development, Saturday

Summary of junction performance

	AM				PM				Saturday			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
2018												
Arm 1	0.6	2.68	0.36	A	0.3	2.23	0.22	A	0.4	2.65	0.28	A
Arm 2	0.2	1.56	0.18	A	0.4	1.59	0.28	A	0.4	1.64	0.29	A
Arm 3	0.2	2.17	0.15	A	0.4	2.82	0.28	A	0.3	2.77	0.26	A
Arm 4	0.3	1.45	0.22	A	0.3	1.57	0.24	A	0.4	1.70	0.31	A
2018 with development												
Arm 1	0.6	2.73	0.37	A	0.3	2.29	0.23	A	0.4	2.79	0.30	A
Arm 2	0.2	1.58	0.18	A	0.4	1.62	0.29	A	0.5	1.71	0.31	A
Arm 3	0.2	2.19	0.15	A	0.4	2.91	0.29	A	0.4	2.92	0.27	A
Arm 4	0.3	1.46	0.23	A	0.3	1.60	0.25	A	0.5	1.76	0.33	A
2023 + Development												
Arm 1	0.7	2.95	0.40	A	0.3	2.41	0.25	A	0.5	3.02	0.33	A
Arm 2	0.3	1.64	0.20	A	0.5	1.69	0.32	A	0.5	1.79	0.34	A
Arm 3	0.2	2.28	0.16	A	0.5	3.15	0.32	A	0.4	3.17	0.30	A
Arm 4	0.3	1.51	0.25	A	0.4	1.66	0.27	A	0.5	1.85	0.35	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	A5152(west)/A5152(north)/Chester Road/Powell Road Roundabout
Location	Wrexham
Site number	
Date	21/11/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	18111
Enumerator	SCP\anna.stephens
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2018	AM	ONE HOUR	07:45	09:15	15	✓		
D2	2018	PM	ONE HOUR	16:45	18:15	15	✓		
D3	2018	Saturday	ONE HOUR	12:45	14:15	15	✓		
D4	2018 with development	AM	ONE HOUR	07:45	09:15	15	✓		
D5	2018 with development	PM	ONE HOUR	16:45	18:15	15	✓		
D6	2018 with development	Saturday	ONE HOUR	12:45	14:15	15	✓		
D7	2023 + Development	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D4*G1
D8	2023 + Development	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D5*G1
D9	2023 + Development	Saturday	ONE HOUR	12:45	14:15	15	✓	Simple	D6*G1

Growth Factors

ID	Description	Use TEMPRO	Growth Factor
G1			1.0700

Growth factors are only active if the Demand Set references them in a Relationship.

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2018, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	1.98	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	A5152 Chester Road (north)	
2	Powell Road (east)	
3	Chester Road (south)	
4	A5152 Chester Road (west)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	6.00	11.00	26.0	15.0	31.0	30.0	
2	11.00	13.00	27.0	8.0	31.0	30.0	
3	6.00	10.00	34.0	19.4	31.0	40.0	
4	10.00	12.00	25.0	13.9	31.0	30.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.858	2711
2	1.011	3542
3	0.830	2601
4	1.005	3437

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2018	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	687	100.000
2		ONE HOUR	✓	451	100.000
3		ONE HOUR	✓	264	100.000
4		ONE HOUR	✓	646	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	1	2	3	4	
From	1	0	232	178	277
	2	106	0	16	329
	3	89	24	0	151
	4	22	408	216	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
	1	2	3	4	
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.36	2.68	0.6	A	630	946
2	0.18	1.56	0.2	A	414	621
3	0.15	2.17	0.2	A	242	363
4	0.22	1.45	0.3	A	593	889

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	517	129	487	2293	0.226	516	163	0.0	0.3	2.025	A
2	340	85	504	3033	0.112	339	499	0.0	0.1	1.336	A
3	199	50	535	2157	0.092	198	308	0.0	0.1	1.837	A
4	486	122	165	3272	0.149	486	569	0.0	0.2	1.291	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	618	154	582	2211	0.279	617	195	0.3	0.4	2.258	A
2	405	101	603	2933	0.138	405	597	0.1	0.2	1.423	A
3	237	59	640	2070	0.115	237	368	0.1	0.1	1.964	A
4	581	145	197	3239	0.179	581	680	0.2	0.2	1.353	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	756	189	713	2099	0.360	756	239	0.4	0.6	2.679	A
2	497	124	738	2796	0.178	496	731	0.2	0.2	1.564	A
3	291	73	783	1951	0.149	290	451	0.1	0.2	2.168	A
4	711	178	241	3195	0.223	711	833	0.2	0.3	1.448	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	756	189	713	2099	0.360	756	239	0.6	0.6	2.681	A
2	497	124	739	2796	0.178	497	731	0.2	0.2	1.564	A
3	291	73	784	1950	0.149	291	451	0.2	0.2	2.168	A
4	711	178	241	3195	0.223	711	833	0.3	0.3	1.448	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	618	154	583	2211	0.279	618	195	0.6	0.4	2.261	A
2	405	101	604	2932	0.138	406	597	0.2	0.2	1.426	A
3	237	59	641	2069	0.115	238	369	0.2	0.1	1.965	A
4	581	145	197	3239	0.179	581	681	0.3	0.2	1.356	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	517	129	488	2292	0.226	518	163	0.4	0.3	2.030	A
2	340	85	505	3032	0.112	340	500	0.2	0.1	1.336	A
3	199	50	536	2156	0.092	199	309	0.1	0.1	1.841	A
4	486	122	165	3271	0.149	487	570	0.2	0.2	1.294	A

2018, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	1.94	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2018	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	414	100.000
2		ONE HOUR	✓	789	100.000
3		ONE HOUR	✓	454	100.000
4		ONE HOUR	✓	667	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	1	2	3	4	
From	1	0	204	84	126
	2	243	0	14	532
	3	95	28	0	331
	4	16	494	157	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
	1	2	3	4	
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.22	2.23	0.3	A	380	570
2	0.28	1.59	0.4	A	724	1086
3	0.28	2.82	0.4	A	417	625
4	0.24	1.57	0.3	A	612	918

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	312	78	510	2273	0.137	311	266	0.0	0.2	1.834	A
2	594	149	276	3264	0.182	593	546	0.0	0.2	1.347	A
3	342	85	677	2039	0.168	341	192	0.0	0.2	2.119	A
4	502	126	275	3161	0.159	501	743	0.0	0.2	1.353	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	372	93	610	2187	0.170	372	318	0.2	0.2	1.983	A
2	709	177	330	3209	0.221	709	652	0.2	0.3	1.439	A
3	408	102	810	1929	0.212	408	229	0.2	0.3	2.366	A
4	600	150	329	3107	0.193	599	889	0.2	0.2	1.435	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	456	114	747	2070	0.220	456	390	0.2	0.3	2.230	A
2	869	217	404	3134	0.277	868	799	0.3	0.4	1.588	A
3	500	125	992	1778	0.281	499	281	0.3	0.4	2.815	A
4	734	184	403	3032	0.242	734	1088	0.2	0.3	1.565	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	456	114	748	2069	0.220	456	390	0.3	0.3	2.230	A
2	869	217	404	3134	0.277	869	799	0.4	0.4	1.588	A
3	500	125	992	1778	0.281	500	281	0.4	0.4	2.816	A
4	734	184	403	3032	0.242	734	1089	0.3	0.3	1.566	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	372	93	611	2187	0.170	372	318	0.3	0.2	1.984	A
2	709	177	330	3209	0.221	710	653	0.4	0.3	1.440	A
3	408	102	810	1928	0.212	409	229	0.4	0.3	2.369	A
4	600	150	329	3106	0.193	600	890	0.3	0.2	1.435	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	312	78	511	2272	0.137	312	267	0.2	0.2	1.838	A
2	594	149	276	3263	0.182	594	547	0.3	0.2	1.350	A
3	342	85	679	2038	0.168	342	192	0.3	0.2	2.123	A
4	502	126	276	3160	0.159	502	745	0.2	0.2	1.354	A

2018 , Saturday

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	2.03	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2018	Saturday	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	487	100.000
2		ONE HOUR	✓	803	100.000
3		ONE HOUR	✓	404	100.000
4		ONE HOUR	✓	850	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1	2	3	4
	1	0	232	106	149
	2	223	0	14	566
	3	93	30	0	281
	4	14	670	166	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
	1	2	3	4	
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.28	2.65	0.4	A	447	670
2	0.29	1.64	0.4	A	737	1105
3	0.26	2.77	0.3	A	371	556
4	0.31	1.70	0.4	A	780	1170

Main Results for each time segment

12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	367	92	651	2152	0.170	366	248	0.0	0.2	2.014	A
2	605	151	316	3223	0.188	604	700	0.0	0.2	1.374	A
3	304	76	705	2016	0.151	303	215	0.0	0.2	2.101	A
4	640	160	260	3176	0.202	639	748	0.0	0.3	1.419	A

13:00 - 13:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	438	109	778	2043	0.214	438	297	0.2	0.3	2.242	A
2	722	180	378	3160	0.228	722	837	0.2	0.3	1.475	A
3	363	91	843	1901	0.191	363	257	0.2	0.2	2.339	A
4	764	191	311	3125	0.245	764	895	0.3	0.3	1.524	A

13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	536	134	953	1893	0.283	536	363	0.3	0.4	2.652	A
2	884	221	463	3074	0.288	884	1026	0.3	0.4	1.642	A
3	445	111	1032	1744	0.255	444	315	0.2	0.3	2.769	A
4	936	234	381	3054	0.306	935	1096	0.3	0.4	1.698	A

13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	536	134	953	1893	0.283	536	363	0.4	0.4	2.653	A
2	884	221	464	3074	0.288	884	1026	0.4	0.4	1.643	A
3	445	111	1033	1744	0.255	445	315	0.3	0.3	2.770	A
4	936	234	381	3054	0.306	936	1097	0.4	0.4	1.698	A

13:45 - 14:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	438	109	779	2042	0.214	438	297	0.4	0.3	2.246	A
2	722	180	379	3160	0.228	722	838	0.4	0.3	1.478	A
3	363	91	844	1901	0.191	364	257	0.3	0.2	2.344	A
4	764	191	311	3124	0.245	765	896	0.4	0.3	1.527	A

14:00 - 14:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	367	92	652	2151	0.170	367	249	0.3	0.2	2.019	A
2	605	151	317	3222	0.188	605	702	0.3	0.2	1.375	A
3	304	76	707	2015	0.151	304	215	0.2	0.2	2.104	A
4	640	160	261	3175	0.202	640	750	0.3	0.3	1.421	A

2018 with development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	2.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2018 with development	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	695	100.000
2		ONE HOUR	✓	469	100.000
3		ONE HOUR	✓	264	100.000
4		ONE HOUR	✓	664	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	1	2	3	4	
From	1	0	240	178	277
	2	111	0	16	342
	3	89	24	0	151
	4	22	426	216	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	1	2	3	4
From	1	0	0	0
	2	0	0	0
	3	0	0	0
	4	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.37	2.73	0.6	A	638	957
2	0.18	1.58	0.2	A	430	646
3	0.15	2.19	0.2	A	242	363
4	0.23	1.46	0.3	A	609	914

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	523	131	501	2281	0.229	522	167	0.0	0.3	2.045	A
2	353	88	504	3033	0.116	353	519	0.0	0.1	1.342	A
3	199	50	549	2146	0.093	198	308	0.0	0.1	1.848	A
4	500	125	168	3268	0.153	499	579	0.0	0.2	1.300	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	625	156	599	2197	0.284	624	199	0.3	0.4	2.289	A
2	422	105	603	2933	0.144	421	620	0.1	0.2	1.432	A
3	237	59	656	2057	0.115	237	368	0.1	0.1	1.978	A
4	597	149	201	3235	0.185	597	692	0.2	0.2	1.364	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	765	191	733	2082	0.368	764	244	0.4	0.6	2.731	A
2	516	129	738	2796	0.185	516	759	0.2	0.2	1.578	A
3	291	73	803	1934	0.150	290	451	0.1	0.2	2.189	A
4	731	183	246	3189	0.229	731	847	0.2	0.3	1.463	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	765	191	733	2082	0.368	765	244	0.6	0.6	2.734	A
2	516	129	739	2796	0.185	516	760	0.2	0.2	1.578	A
3	291	73	804	1934	0.150	291	451	0.2	0.2	2.190	A
4	731	183	247	3189	0.229	731	848	0.3	0.3	1.463	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	625	156	599	2197	0.284	626	200	0.6	0.4	2.291	A
2	422	105	604	2932	0.144	422	621	0.2	0.2	1.433	A
3	237	59	657	2056	0.115	238	369	0.2	0.1	1.979	A
4	597	149	202	3235	0.185	597	693	0.3	0.2	1.364	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	523	131	502	2280	0.229	524	167	0.4	0.3	2.050	A
2	353	88	505	3032	0.116	353	520	0.2	0.1	1.345	A
3	199	50	550	2145	0.093	199	309	0.1	0.1	1.852	A
4	500	125	169	3268	0.153	500	580	0.2	0.2	1.300	A

2018 with development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	1.98	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2018 with development	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	427	100.000
2		ONE HOUR	✓	832	100.000
3		ONE HOUR	✓	454	100.000
4		ONE HOUR	✓	697	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	1	2	3	4	
From	1	0	217	84	126
	2	256	0	14	562
	3	95	28	0	331
	4	16	524	157	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	1	2	3	4
From	1	0	0	0
	2	0	0	0
	3	0	0	0
	4	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.23	2.29	0.3	A	392	588
2	0.29	1.62	0.4	A	763	1145
3	0.29	2.91	0.4	A	417	625
4	0.25	1.60	0.3	A	640	959

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	321	80	533	2253	0.143	321	276	0.0	0.2	1.862	A
2	626	157	276	3264	0.192	625	578	0.0	0.2	1.364	A
3	342	85	710	2012	0.170	341	192	0.0	0.2	2.153	A
4	525	131	285	3151	0.167	524	766	0.0	0.2	1.370	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	384	96	637	2164	0.177	384	330	0.2	0.2	2.021	A
2	748	187	330	3209	0.233	748	691	0.2	0.3	1.462	A
3	408	102	848	1897	0.215	408	229	0.2	0.3	2.417	A
4	627	157	341	3095	0.202	626	916	0.2	0.3	1.457	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	470	118	780	2041	0.230	470	404	0.2	0.3	2.291	A
2	916	229	404	3134	0.292	916	846	0.3	0.4	1.622	A
3	500	125	1039	1739	0.287	499	281	0.3	0.4	2.902	A
4	767	192	417	3018	0.254	767	1121	0.3	0.3	1.598	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	470	118	781	2041	0.230	470	404	0.3	0.3	2.291	A
2	916	229	404	3134	0.292	916	847	0.4	0.4	1.622	A
3	500	125	1039	1738	0.288	500	281	0.4	0.4	2.905	A
4	767	192	417	3018	0.254	767	1122	0.3	0.3	1.599	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	384	96	638	2164	0.177	384	330	0.3	0.2	2.024	A
2	748	187	330	3209	0.233	748	692	0.4	0.3	1.462	A
3	408	102	849	1896	0.215	409	229	0.4	0.3	2.422	A
4	627	157	341	3094	0.202	627	917	0.3	0.3	1.460	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	321	80	534	2253	0.143	322	276	0.2	0.2	1.866	A
2	626	157	276	3263	0.192	627	579	0.3	0.2	1.365	A
3	342	85	711	2011	0.170	342	192	0.3	0.2	2.157	A
4	525	131	285	3150	0.167	525	768	0.3	0.2	1.373	A

2018 with development, Saturday

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	2.11	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2018 with development	Saturday	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	504	100.000
2		ONE HOUR	✓	876	100.000
3		ONE HOUR	✓	404	100.000
4		ONE HOUR	✓	900	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
	1	2	3	4	
From	1	0	249	106	149
	2	244	0	14	618
	3	93	30	0	281
	4	14	720	166	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	1	2	3	4
From	1	0	0	0
	2	0	0	0
	3	0	0	0
	4	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.30	2.79	0.4	A	462	694
2	0.31	1.71	0.5	A	804	1206
3	0.27	2.92	0.4	A	371	556
4	0.33	1.76	0.5	A	826	1239

Main Results for each time segment

12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	379	95	688	2120	0.179	379	264	0.0	0.2	2.066	A
2	659	165	316	3223	0.205	658	751	0.0	0.3	1.403	A
3	304	76	760	1970	0.154	303	215	0.0	0.2	2.158	A
4	678	169	276	3160	0.214	676	788	0.0	0.3	1.449	A

13:00 - 13:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	453	113	823	2004	0.226	453	315	0.2	0.3	2.320	A
2	788	197	378	3160	0.249	787	898	0.3	0.3	1.516	A
3	363	91	908	1847	0.197	363	257	0.2	0.2	2.425	A
4	809	202	330	3106	0.261	809	942	0.3	0.4	1.566	A

13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	555	139	1008	1846	0.301	554	386	0.3	0.4	2.786	A
2	964	241	463	3074	0.314	964	1099	0.3	0.5	1.705	A
3	445	111	1112	1678	0.265	444	315	0.2	0.4	2.919	A
4	991	248	404	3031	0.327	990	1153	0.4	0.5	1.763	A

13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	555	139	1009	1845	0.301	555	386	0.4	0.4	2.789	A
2	964	241	464	3074	0.314	964	1100	0.5	0.5	1.705	A
3	445	111	1113	1677	0.265	445	315	0.4	0.4	2.920	A
4	991	248	404	3031	0.327	991	1154	0.5	0.5	1.763	A

13:45 - 14:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	453	113	824	2004	0.226	454	316	0.4	0.3	2.322	A
2	788	197	379	3160	0.249	788	899	0.5	0.3	1.519	A
3	363	91	910	1846	0.197	364	257	0.4	0.2	2.428	A
4	809	202	330	3105	0.261	810	943	0.5	0.4	1.570	A

14:00 - 14:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	379	95	690	2119	0.179	380	264	0.3	0.2	2.071	A
2	659	165	317	3222	0.205	660	753	0.3	0.3	1.404	A
3	304	76	762	1969	0.154	304	215	0.2	0.2	2.164	A
4	678	169	276	3159	0.214	678	789	0.4	0.3	1.452	A

2023 + Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	2.11	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D7	2023 + Development	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D4*G1

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	744	100.000
2		ONE HOUR	✓	502	100.000
3		ONE HOUR	✓	282	100.000
4		ONE HOUR	✓	710	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	257	190	296
	2	119	0	17	366
	3	95	26	0	162
	4	24	456	231	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
	1	2	3	4	
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.40	2.95	0.7	A	682	1024
2	0.20	1.64	0.3	A	460	691
3	0.16	2.28	0.2	A	259	389
4	0.25	1.51	0.3	A	652	978

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	560	140	536	2251	0.249	559	179	0.0	0.3	2.127	A
2	378	94	539	2997	0.126	377	555	0.0	0.1	1.373	A
3	213	53	587	2114	0.101	212	330	0.0	0.1	1.892	A
4	535	134	180	3256	0.164	534	619	0.0	0.2	1.322	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	669	167	640	2161	0.309	668	213	0.3	0.4	2.411	A
2	451	113	645	2891	0.156	451	663	0.1	0.2	1.475	A
3	254	63	702	2018	0.126	254	394	0.1	0.1	2.039	A
4	639	160	215	3221	0.198	639	740	0.2	0.2	1.393	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	819	205	784	2038	0.402	818	261	0.4	0.7	2.950	A
2	553	138	790	2744	0.201	552	812	0.2	0.3	1.641	A
3	311	78	859	1888	0.165	311	483	0.1	0.2	2.282	A
4	782	196	264	3172	0.247	782	906	0.2	0.3	1.505	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	819	205	785	2037	0.402	819	262	0.7	0.7	2.953	A
2	553	138	790	2744	0.201	553	813	0.3	0.3	1.642	A
3	311	78	860	1887	0.165	311	483	0.2	0.2	2.283	A
4	782	196	264	3172	0.247	782	907	0.3	0.3	1.505	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	669	167	641	2161	0.309	669	214	0.7	0.4	2.416	A
2	451	113	646	2890	0.156	451	664	0.3	0.2	1.478	A
3	254	63	703	2018	0.126	254	395	0.2	0.1	2.041	A
4	639	160	216	3220	0.198	639	741	0.3	0.2	1.396	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	560	140	537	2250	0.249	560	179	0.4	0.3	2.132	A
2	378	94	541	2996	0.126	378	556	0.2	0.1	1.374	A
3	213	53	588	2113	0.101	213	330	0.1	0.1	1.894	A
4	535	134	181	3256	0.164	535	621	0.2	0.2	1.324	A

2023 + Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	2.08	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D8	2023 + Development	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D5*G1

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	457	100.000
2		ONE HOUR	✓	890	100.000
3		ONE HOUR	✓	486	100.000
4		ONE HOUR	✓	746	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	232	90	135
	2	274	0	15	601
	3	102	30	0	354
	4	17	561	168	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	1	2	3	4
From	1	0	0	0
	2	0	0	0
	3	0	0	0
	4	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.25	2.41	0.3	A	419	629
2	0.32	1.69	0.5	A	817	1225
3	0.32	3.15	0.5	A	446	669
4	0.27	1.66	0.4	A	684	1027

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	344	86	570	2221	0.155	343	295	0.0	0.2	1.916	A
2	670	168	295	3244	0.207	669	618	0.0	0.3	1.397	A
3	366	91	759	1971	0.186	365	205	0.0	0.2	2.240	A
4	561	140	305	3131	0.179	561	819	0.0	0.2	1.400	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	411	103	682	2126	0.193	411	353	0.2	0.2	2.098	A
2	800	200	353	3186	0.251	800	739	0.3	0.3	1.508	A
3	437	109	908	1848	0.236	436	245	0.2	0.3	2.550	A
4	670	168	364	3071	0.218	670	980	0.2	0.3	1.499	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	503	126	835	1994	0.252	503	432	0.2	0.3	2.413	A
2	980	245	432	3106	0.316	980	905	0.3	0.5	1.692	A
3	535	134	1112	1679	0.319	534	300	0.3	0.5	3.144	A
4	821	205	446	2989	0.275	821	1200	0.3	0.4	1.660	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	503	126	835	1994	0.252	503	432	0.3	0.3	2.414	A
2	980	245	432	3106	0.316	980	906	0.5	0.5	1.693	A
3	535	134	1112	1678	0.319	535	300	0.5	0.5	3.148	A
4	821	205	446	2988	0.275	821	1200	0.4	0.4	1.660	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	411	103	682	2125	0.193	411	353	0.3	0.2	2.102	A
2	800	200	353	3185	0.251	801	740	0.5	0.3	1.509	A
3	437	109	909	1847	0.236	437	245	0.5	0.3	2.554	A
4	670	168	365	3070	0.218	671	981	0.4	0.3	1.499	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	344	86	571	2220	0.155	344	296	0.2	0.2	1.920	A
2	670	168	296	3244	0.207	671	620	0.3	0.3	1.398	A
3	366	91	761	1970	0.186	366	206	0.3	0.2	2.246	A
4	561	140	305	3130	0.179	562	821	0.3	0.2	1.403	A

2023 + Development, Saturday

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	2.25	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D9	2023 + Development	Saturday	ONE HOUR	12:45	14:15	15	✓	Simple	D6*G1

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	539	100.000
2		ONE HOUR	✓	937	100.000
3		ONE HOUR	✓	432	100.000
4		ONE HOUR	✓	963	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	266	113	159
	2	261	0	15	661
	3	100	32	0	301
	4	15	770	178	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	1	2	3	4
From	1	0	0	0
	2	0	0	0
	3	0	0	0
	4	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.33	3.02	0.5	A	495	742
2	0.34	1.79	0.5	A	860	1290
3	0.30	3.17	0.4	A	397	595
4	0.35	1.85	0.5	A	884	1325

Main Results for each time segment

12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	406	101	737	2079	0.195	405	282	0.0	0.2	2.150	A
2	706	176	338	3200	0.220	705	803	0.0	0.3	1.442	A
3	325	81	813	1926	0.169	325	230	0.0	0.2	2.246	A
4	725	181	295	3141	0.231	724	843	0.0	0.3	1.489	A

13:00 - 13:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	485	121	881	1955	0.248	484	337	0.2	0.3	2.448	A
2	843	211	405	3133	0.269	842	960	0.3	0.4	1.570	A
3	389	97	972	1794	0.217	388	275	0.2	0.3	2.560	A
4	866	216	353	3082	0.281	865	1008	0.3	0.4	1.623	A

13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	594	148	1078	1785	0.333	593	413	0.3	0.5	3.018	A
2	1032	258	496	3042	0.339	1031	1176	0.4	0.5	1.790	A
3	476	119	1190	1613	0.295	475	337	0.3	0.4	3.162	A
4	1060	265	432	3003	0.353	1060	1234	0.4	0.5	1.852	A

13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	594	148	1079	1785	0.333	594	414	0.5	0.5	3.022	A
2	1032	258	496	3041	0.339	1032	1177	0.5	0.5	1.790	A
3	476	119	1191	1613	0.295	476	337	0.4	0.4	3.166	A
4	1060	265	432	3003	0.353	1060	1235	0.5	0.5	1.852	A

13:45 - 14:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	485	121	882	1954	0.248	485	338	0.5	0.3	2.451	A
2	843	211	405	3133	0.269	843	962	0.5	0.4	1.574	A
3	389	97	973	1793	0.217	389	275	0.4	0.3	2.566	A
4	866	216	353	3082	0.281	866	1009	0.5	0.4	1.627	A

14:00 - 14:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	406	101	738	2077	0.195	406	283	0.3	0.2	2.154	A
2	706	176	339	3200	0.221	706	805	0.4	0.3	1.445	A
3	325	81	815	1925	0.169	326	231	0.3	0.2	2.251	A
4	725	181	296	3140	0.231	725	845	0.4	0.3	1.492	A

S|C|P

APPENDIX 2

Junctions 9												
ARCADY 9 - Roundabout Module												
Version: 9.5.0.6896 © Copyright TRL Limited, 2018												
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The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution												

Filename: A5152 A534 Roundabout.j9

Path: Z:\Job Library\2018\18111 - Lidl, Wrexham Police Station, Wrexham\Traffic Data\ARCADY

Report generation date: 19/12/2018 15:39:59

- »2018, AM
- »2018, PM
- »2018, Saturday
- »2018 with development, AM
- »2018 with development, PM
- »2018 with development, Saturday
- »2023 + Development, AM
- »2023 + Development, PM
- »2023 + Development, Saturday

Summary of junction performance

	AM				PM				Saturday			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
2018												
Arm 1	0.5	2.73	0.33	A	0.7	3.38	0.41	A	2.0	6.62	0.67	A
Arm 2	0.9	5.09	0.47	A	0.7	4.91	0.42	A	2.1	11.75	0.68	B
Arm 3	0.3	3.61	0.22	A	0.5	3.98	0.35	A	3.1	12.55	0.76	B
Arm 4	0.4	3.78	0.28	A	0.9	5.42	0.49	A	2.9	13.70	0.75	B
Arm 5	0.2	5.02	0.13	A	0.6	8.29	0.37	A	1.5	20.84	0.61	C
2018 with development												
Arm 1	0.5	2.77	0.34	A	0.8	3.54	0.44	A	2.5	7.76	0.72	A
Arm 2	0.9	5.26	0.49	A	0.8	5.10	0.43	A	2.5	14.00	0.72	B
Arm 3	0.3	3.66	0.23	A	0.6	4.10	0.36	A	4.0	15.79	0.81	C
Arm 4	0.4	3.86	0.29	A	1.0	5.67	0.51	A	3.7	16.87	0.79	C
Arm 5	0.2	5.13	0.14	A	0.6	8.66	0.38	A	2.0	27.14	0.68	D
2023 + Development												
Arm 1	0.6	2.91	0.36	A	0.9	3.84	0.48	A	3.5	10.35	0.78	B
Arm 2	1.1	5.85	0.53	A	0.9	5.64	0.47	A	4.2	22.20	0.82	C
Arm 3	0.3	3.90	0.25	A	0.6	4.44	0.39	A	7.8	29.22	0.90	D
Arm 4	0.4	4.06	0.31	A	1.2	6.35	0.55	A	6.6	29.12	0.88	D
Arm 5	0.2	5.39	0.15	A	0.8	9.96	0.43	A	4.1	53.89	0.83	F

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	A5152/A534/Holt Street/Tesco Roundabout
Location	Wrexham
Site number	
Date	21/11/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	18111
Enumerator	SCP\anna.stephens
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2018	AM	ONE HOUR	07:45	09:15	15	✓		
D2	2018	PM	ONE HOUR	16:45	18:15	15	✓		
D3	2018	Saturday	ONE HOUR	12:45	14:15	15	✓		
D4	2018 with development	AM	ONE HOUR	07:45	09:15	15	✓		
D5	2018 with development	PM	ONE HOUR	16:45	18:15	15	✓		
D6	2018 with development	Saturday	ONE HOUR	12:45	14:15	15	✓		
D7	2023 + Development	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D4*G1
D8	2023 + Development	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D5*G1
D9	2023 + Development	Saturday	ONE HOUR	12:45	14:15	15	✓	Simple	D6*G1

Growth Factors

ID	Description	Use TEMPRO	Growth Factor
G1			1.0700

Growth factors are only active if the Demand Set references them in a Relationship.

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2018, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	3.91	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	A5152 (N)	
2	A534	
3	Tesco	
4	A5152 (S)	
5	Holt Street	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	5.72	10.00	12.5	12.0	50.0	43.0	
2	3.74	7.00	20.0	11.6	50.0	38.0	
3	4.00	7.00	35.0	27.3	50.0	45.0	
4	3.46	8.00	12.0	19.0	50.0	40.0	
5	3.40	5.50	3.3	18.0	50.0	40.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.675	2169
2	0.585	1670
3	0.626	1850
4	0.581	1608
5	0.500	1188

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2018	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	580	100.000
2		ONE HOUR	✓	575	100.000
3		ONE HOUR	✓	259	100.000
4		ONE HOUR	✓	330	100.000
5		ONE HOUR	✓	101	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
	1	2	3	4	5	
From	1	0	159	132	266	23
	2	207	0	50	235	83
	3	73	50	0	113	23
	4	146	114	64	0	6
	5	40	33	19	9	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
	1	2	3	4	5	
From	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.33	2.73	0.5	A	532	798
2	0.47	5.09	0.9	A	528	791
3	0.22	3.61	0.3	A	238	356
4	0.28	3.78	0.4	A	303	454
5	0.13	5.02	0.2	A	93	139

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	437	109	217	2023	0.216	436	350	0.0	0.3	2.267	A
2	433	108	385	1445	0.300	431	267	0.0	0.4	3.546	A
3	195	49	617	1464	0.133	194	199	0.0	0.2	2.834	A
4	248	62	344	1408	0.176	248	468	0.0	0.2	3.100	A
5	76	19	491	943	0.081	76	101	0.0	0.1	4.150	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	521	130	260	1994	0.261	521	418	0.3	0.4	2.444	A
2	517	129	461	1400	0.369	516	320	0.4	0.6	4.070	A
3	233	58	739	1388	0.168	233	238	0.2	0.2	3.116	A
4	297	74	412	1369	0.217	296	560	0.2	0.3	3.356	A
5	91	23	587	894	0.102	91	121	0.1	0.1	4.480	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	639	160	318	1955	0.327	638	512	0.4	0.5	2.732	A
2	633	158	564	1340	0.473	632	392	0.6	0.9	5.077	A
3	285	71	905	1284	0.222	285	291	0.2	0.3	3.602	A
4	363	91	505	1315	0.276	363	685	0.3	0.4	3.777	A
5	111	28	719	828	0.134	111	148	0.1	0.2	5.017	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	639	160	318	1954	0.327	639	513	0.5	0.5	2.735	A
2	633	158	565	1340	0.473	633	392	0.9	0.9	5.095	A
3	285	71	906	1283	0.222	285	292	0.3	0.3	3.606	A
4	363	91	505	1315	0.276	363	686	0.4	0.4	3.781	A
5	111	28	720	828	0.134	111	149	0.2	0.2	5.022	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	521	130	260	1994	0.262	522	420	0.5	0.4	2.446	A
2	517	129	462	1400	0.369	518	320	0.9	0.6	4.089	A
3	233	58	741	1386	0.168	233	239	0.3	0.2	3.121	A
4	297	74	413	1368	0.217	297	561	0.4	0.3	3.363	A
5	91	23	589	893	0.102	91	122	0.2	0.1	4.486	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	437	109	218	2022	0.216	437	351	0.4	0.3	2.272	A
2	433	108	387	1444	0.300	434	268	0.6	0.4	3.564	A
3	195	49	620	1462	0.133	195	200	0.2	0.2	2.843	A
4	248	62	346	1408	0.177	249	470	0.3	0.2	3.106	A
5	76	19	493	941	0.081	76	102	0.1	0.1	4.160	A

2018, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	4.75	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2018	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	685	100.000
2		ONE HOUR	✓	479	100.000
3		ONE HOUR	✓	440	100.000
4		ONE HOUR	✓	574	100.000
5		ONE HOUR	✓	233	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
		1	2	3	4	5
From	1	0	246	174	233	32
	2	133	0	120	158	68
	3	129	75	0	185	51
	4	304	159	103	0	8
	5	98	41	47	47	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
From		1	2	3	4	5
	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.41	3.38	0.7	A	629	943
2	0.42	4.91	0.7	A	440	659
3	0.35	3.98	0.5	A	404	606
4	0.49	5.42	0.9	A	527	790
5	0.37	8.29	0.6	A	214	321

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	516	129	354	1930	0.267	514	498	0.0	0.4	2.540	A
2	361	90	477	1391	0.259	359	391	0.0	0.3	3.485	A
3	331	83	503	1535	0.216	330	333	0.0	0.3	2.984	A
4	432	108	366	1396	0.310	430	467	0.0	0.4	3.722	A
5	175	44	677	849	0.207	174	119	0.0	0.3	5.327	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	616	154	424	1883	0.327	615	596	0.4	0.5	2.839	A
2	431	108	571	1336	0.322	430	468	0.3	0.5	3.973	A
3	396	99	603	1473	0.269	395	399	0.3	0.4	3.339	A
4	516	129	438	1354	0.381	515	559	0.4	0.6	4.289	A
5	209	52	811	782	0.268	209	143	0.3	0.4	6.274	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	754	189	518	1819	0.415	753	730	0.5	0.7	3.374	A
2	527	132	699	1261	0.418	526	573	0.5	0.7	4.895	A
3	484	121	738	1389	0.349	484	488	0.4	0.5	3.976	A
4	632	158	536	1297	0.487	631	685	0.6	0.9	5.392	A
5	257	64	992	692	0.371	256	175	0.4	0.6	8.240	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	754	189	520	1818	0.415	754	731	0.7	0.7	3.382	A
2	527	132	700	1260	0.418	527	574	0.7	0.7	4.911	A
3	484	121	739	1388	0.349	484	489	0.5	0.5	3.984	A
4	632	158	537	1296	0.487	632	686	0.9	0.9	5.417	A
5	257	64	994	691	0.371	257	175	0.6	0.6	8.290	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	616	154	426	1882	0.327	617	598	0.7	0.5	2.848	A
2	431	108	573	1335	0.323	432	469	0.7	0.5	3.991	A
3	396	99	604	1472	0.269	396	400	0.5	0.4	3.350	A
4	516	129	440	1353	0.381	517	561	0.9	0.6	4.313	A
5	209	52	814	781	0.268	210	143	0.6	0.4	6.316	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	516	129	356	1929	0.267	516	501	0.5	0.4	2.550	A
2	361	90	479	1389	0.260	361	393	0.5	0.4	3.501	A
3	331	83	506	1534	0.216	332	335	0.4	0.3	2.994	A
4	432	108	368	1395	0.310	433	470	0.6	0.5	3.743	A
5	175	44	681	847	0.207	176	120	0.4	0.3	5.365	A

2018, Saturday

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	11.51	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2018	Saturday	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	987	100.000
2		ONE HOUR	✓	593	100.000
3		ONE HOUR	✓	840	100.000
4		ONE HOUR	✓	714	100.000
5		ONE HOUR	✓	242	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
		1	2	3	4	5
From	1	0	212	307	391	77
	2	166	0	170	214	43
	3	335	171	0	248	86
	4	274	170	246	0	24
	5	103	55	46	38	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
From		1	2	3	4	5
	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.67	6.62	2.0	A	906	1359
2	0.68	11.75	2.1	B	544	816
3	0.76	12.55	3.1	B	771	1156
4	0.75	13.70	2.9	B	655	983
5	0.61	20.84	1.5	C	222	333

Main Results for each time segment

12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	743	186	543	1802	0.412	740	657	0.0	0.7	3.381	A
2	446	112	828	1186	0.377	444	455	0.0	0.6	4.839	A
3	632	158	696	1415	0.447	629	576	0.0	0.8	4.565	A
4	538	134	658	1227	0.438	534	668	0.0	0.8	5.179	A
5	182	46	1020	678	0.269	181	172	0.0	0.4	7.221	A

13:00 - 13:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	887	222	651	1730	0.513	886	787	0.7	1.0	4.258	A
2	533	133	991	1090	0.489	532	545	0.6	0.9	6.431	A
3	755	189	833	1329	0.568	753	690	0.8	1.3	6.233	A
4	642	160	787	1151	0.558	640	799	0.8	1.2	7.015	A
5	218	54	1221	577	0.377	217	206	0.4	0.6	9.955	A

13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1087	272	792	1634	0.665	1083	959	1.0	1.9	6.488	A
2	653	163	1210	962	0.679	649	665	0.9	2.0	11.329	B
3	925	231	1018	1214	0.762	918	842	1.3	3.0	11.904	B
4	786	197	960	1051	0.748	780	975	1.2	2.8	12.977	B
5	266	67	1488	444	0.600	263	252	0.6	1.4	19.581	C

13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1087	272	799	1630	0.667	1087	966	1.9	2.0	6.621	A
2	653	163	1216	959	0.681	653	669	2.0	2.1	11.747	B
3	925	231	1023	1210	0.764	924	846	3.0	3.1	12.547	B
4	786	197	966	1047	0.751	786	981	2.8	2.9	13.704	B
5	266	67	1499	438	0.608	266	253	1.4	1.5	20.835	C

13:45 - 14:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	887	222	660	1724	0.515	891	797	2.0	1.1	4.342	A
2	533	133	1000	1085	0.491	538	551	2.1	1.0	6.625	A
3	755	189	841	1324	0.570	762	697	3.1	1.3	6.484	A
4	642	160	796	1146	0.560	648	807	2.9	1.3	7.321	A
5	218	54	1236	570	0.382	221	208	1.5	0.6	10.425	B

14:00 - 14:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	743	186	549	1799	0.413	745	663	1.1	0.7	3.421	A
2	446	112	834	1182	0.378	448	459	1.0	0.6	4.914	A
3	632	158	701	1411	0.448	635	581	1.3	0.8	4.645	A
4	538	134	663	1223	0.439	540	673	1.3	0.8	5.281	A
5	182	46	1029	673	0.271	183	174	0.6	0.4	7.359	A

2018 with development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	3.99	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2018 with development	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	597	100.000
2		ONE HOUR	✓	588	100.000
3		ONE HOUR	✓	260	100.000
4		ONE HOUR	✓	339	100.000
5		ONE HOUR	✓	103	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
		1	2	3	4	5
From	1	0	164	136	274	23
	2	220	0	50	235	83
	3	74	50	0	113	23
	4	155	114	64	0	6
	5	42	33	19	9	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
From		1	2	3	4	5
	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.34	2.77	0.5	A	548	822
2	0.49	5.26	0.9	A	540	809
3	0.23	3.66	0.3	A	239	358
4	0.29	3.86	0.4	A	311	467
5	0.14	5.13	0.2	A	95	142

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	449	112	217	2023	0.222	448	368	0.0	0.3	2.285	A
2	443	111	394	1439	0.308	441	271	0.0	0.4	3.599	A
3	196	49	633	1454	0.135	195	202	0.0	0.2	2.858	A
4	255	64	355	1402	0.182	254	474	0.0	0.2	3.134	A
5	78	19	508	934	0.083	77	101	0.0	0.1	4.199	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	537	134	260	1994	0.269	536	441	0.3	0.4	2.469	A
2	529	132	472	1394	0.379	528	324	0.4	0.6	4.154	A
3	234	58	758	1376	0.170	234	242	0.2	0.2	3.151	A
4	305	76	425	1362	0.224	304	567	0.2	0.3	3.404	A
5	93	23	608	884	0.105	92	121	0.1	0.1	4.549	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	657	164	318	1955	0.336	657	540	0.4	0.5	2.772	A
2	647	162	578	1332	0.486	646	397	0.6	0.9	5.238	A
3	286	72	928	1270	0.225	286	296	0.2	0.3	3.659	A
4	373	93	520	1307	0.286	373	694	0.3	0.4	3.853	A
5	113	28	744	816	0.139	113	148	0.1	0.2	5.123	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	657	164	318	1954	0.336	657	541	0.5	0.5	2.774	A
2	647	162	578	1332	0.486	647	397	0.9	0.9	5.259	A
3	286	72	929	1269	0.226	286	296	0.3	0.3	3.663	A
4	373	93	521	1306	0.286	373	695	0.4	0.4	3.859	A
5	113	28	745	815	0.139	113	149	0.2	0.2	5.129	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	537	134	260	1994	0.269	537	442	0.5	0.4	2.472	A
2	529	132	472	1394	0.379	530	325	0.9	0.6	4.176	A
3	234	58	760	1375	0.170	234	242	0.3	0.2	3.159	A
4	305	76	426	1361	0.224	305	568	0.4	0.3	3.410	A
5	93	23	610	883	0.105	93	122	0.2	0.1	4.557	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	449	112	218	2022	0.222	450	370	0.4	0.3	2.289	A
2	443	111	396	1439	0.308	443	272	0.6	0.4	3.619	A
3	196	49	636	1452	0.135	196	203	0.2	0.2	2.867	A
4	255	64	357	1401	0.182	255	476	0.3	0.2	3.141	A
5	78	19	510	933	0.083	78	102	0.1	0.1	4.210	A

2018 with development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	4.93	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2018 with development	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	728	100.000
2		ONE HOUR	✓	488	100.000
3		ONE HOUR	✓	448	100.000
4		ONE HOUR	✓	591	100.000
5		ONE HOUR	✓	233	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
	1	2	3	4	5	
From	1	0	262	186	248	32
	2	142	0	120	158	68
	3	137	75	0	185	51
	4	321	159	103	0	8
	5	98	41	47	47	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
From		1	2	3	4	5
	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.44	3.54	0.8	A	668	1002
2	0.43	5.10	0.8	A	448	672
3	0.36	4.10	0.6	A	411	617
4	0.51	5.67	1.0	A	542	813
5	0.38	8.66	0.6	A	214	321

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	548	137	354	1930	0.284	546	523	0.0	0.4	2.599	A
2	367	92	497	1379	0.266	366	403	0.0	0.4	3.549	A
3	337	84	521	1524	0.221	336	342	0.0	0.3	3.028	A
4	445	111	379	1388	0.320	443	479	0.0	0.5	3.799	A
5	175	44	703	837	0.210	174	119	0.0	0.3	5.427	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	654	164	424	1883	0.348	654	627	0.4	0.5	2.926	A
2	439	110	595	1322	0.332	438	482	0.4	0.5	4.072	A
3	403	101	624	1460	0.276	402	409	0.3	0.4	3.405	A
4	531	133	454	1345	0.395	531	573	0.5	0.6	4.416	A
5	209	52	841	767	0.273	209	143	0.3	0.4	6.439	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	802	200	518	1819	0.441	801	767	0.5	0.8	3.530	A
2	537	134	729	1244	0.432	536	590	0.5	0.8	5.081	A
3	493	123	764	1372	0.359	493	501	0.4	0.6	4.088	A
4	651	163	555	1286	0.506	649	701	0.6	1.0	5.640	A
5	257	64	1030	673	0.381	256	175	0.4	0.6	8.604	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	802	200	520	1818	0.441	802	768	0.8	0.8	3.539	A
2	537	134	730	1243	0.432	537	591	0.8	0.8	5.100	A
3	493	123	765	1371	0.360	493	502	0.6	0.6	4.099	A
4	651	163	556	1286	0.506	651	702	1.0	1.0	5.669	A
5	257	64	1032	672	0.382	257	175	0.6	0.6	8.662	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	654	164	426	1882	0.348	655	629	0.8	0.5	2.937	A
2	439	110	597	1321	0.332	440	484	0.8	0.5	4.091	A
3	403	101	626	1458	0.276	403	411	0.6	0.4	3.416	A
4	531	133	455	1344	0.395	533	575	1.0	0.7	4.445	A
5	209	52	844	766	0.274	210	143	0.6	0.4	6.493	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	548	137	356	1929	0.284	549	526	0.5	0.4	2.610	A
2	367	92	500	1378	0.267	368	405	0.5	0.4	3.569	A
3	337	84	524	1522	0.222	338	344	0.4	0.3	3.041	A
4	445	111	381	1387	0.321	446	481	0.7	0.5	3.827	A
5	175	44	706	835	0.210	176	120	0.4	0.3	5.467	A

2018 with development, Saturday

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	14.09	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2018 with development	Saturday	ONE HOUR	12:45	14:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1060	100.000
2		ONE HOUR	✓	605	100.000
3		ONE HOUR	✓	866	100.000
4		ONE HOUR	✓	735	100.000
5		ONE HOUR	✓	250	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
From		1	2	3	4	5
	1	0	228	330	420	82
	2	178	0	170	214	43
	3	361	171	0	248	86
	4	295	170	246	0	24
	5	111	55	46	38	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
From		1	2	3	4	5
	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.72	7.76	2.5	A	973	1459
2	0.72	14.00	2.5	B	555	833
3	0.81	15.79	4.0	C	795	1192
4	0.79	16.87	3.7	C	674	1012
5	0.68	27.14	2.0	D	229	344

Main Results for each time segment

12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	798	200	543	1803	0.443	795	707	0.0	0.8	3.563	A
2	455	114	871	1161	0.392	453	467	0.0	0.6	5.068	A
3	652	163	730	1393	0.468	648	593	0.0	0.9	4.812	A
4	553	138	690	1208	0.458	550	689	0.0	0.8	5.444	A
5	188	47	1064	656	0.287	187	176	0.0	0.4	7.644	A

13:00 - 13:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	953	238	650	1730	0.551	951	847	0.8	1.2	4.611	A
2	544	136	1042	1060	0.513	542	559	0.6	1.0	6.927	A
3	779	195	874	1303	0.597	776	710	0.9	1.5	6.802	A
4	661	165	826	1129	0.585	659	825	0.8	1.4	7.615	A
5	225	56	1273	551	0.408	224	211	0.4	0.7	10.957	B

13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1167	292	790	1636	0.713	1162	1029	1.2	2.4	7.525	A
2	666	167	1271	926	0.719	661	681	1.0	2.4	13.266	B
3	953	238	1066	1183	0.806	944	865	1.5	3.8	14.521	B
4	809	202	1005	1025	0.789	801	1006	1.4	3.5	15.512	C
5	275	69	1549	413	0.666	271	257	0.7	1.8	24.472	C

13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1167	292	798	1630	0.716	1167	1039	2.4	2.5	7.760	A
2	666	167	1279	922	0.722	666	687	2.4	2.5	13.997	B
3	953	238	1073	1179	0.809	953	871	3.8	4.0	15.792	C
4	809	202	1013	1020	0.793	808	1012	3.5	3.7	16.872	C
5	275	69	1563	406	0.678	275	259	1.8	2.0	27.142	D

13:45 - 14:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	953	238	662	1722	0.553	958	861	2.5	1.3	4.741	A
2	544	136	1053	1054	0.516	550	567	2.5	1.1	7.218	A
3	779	195	884	1297	0.600	789	719	4.0	1.5	7.210	A
4	661	165	838	1122	0.589	670	835	3.7	1.5	8.101	A
5	225	56	1294	541	0.416	230	213	2.0	0.7	11.750	B

14:00 - 14:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	798	200	549	1798	0.444	800	715	1.3	0.8	3.613	A
2	455	114	877	1157	0.394	457	472	1.1	0.7	5.158	A
3	652	163	736	1390	0.469	655	598	1.5	0.9	4.914	A
4	553	138	696	1204	0.459	556	695	1.5	0.9	5.572	A
5	188	47	1074	651	0.289	189	178	0.7	0.4	7.826	A

2023 + Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	4.31	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D7	2023 + Development	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D4*G1

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	639	100.000
2		ONE HOUR	✓	629	100.000
3		ONE HOUR	✓	278	100.000
4		ONE HOUR	✓	363	100.000
5		ONE HOUR	✓	110	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
		1	2	3	4	5
From	1	0	175	146	293	25
	2	235	0	54	251	89
	3	79	54	0	121	25
	4	166	122	68	0	6
	5	45	35	20	10	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
From		1	2	3	4	5
	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.36	2.91	0.6	A	586	879
2	0.53	5.85	1.1	A	577	866
3	0.25	3.90	0.3	A	255	383
4	0.31	4.06	0.4	A	333	499
5	0.15	5.39	0.2	A	101	152

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	481	120	232	2013	0.239	480	394	0.0	0.3	2.346	A
2	474	118	422	1423	0.333	472	290	0.0	0.5	3.775	A
3	209	52	677	1426	0.147	209	216	0.0	0.2	2.955	A
4	273	68	380	1388	0.197	272	507	0.0	0.2	3.223	A
5	83	21	543	916	0.091	83	108	0.0	0.1	4.316	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	574	144	278	1982	0.290	574	472	0.3	0.4	2.557	A
2	566	141	505	1375	0.411	565	347	0.5	0.7	4.440	A
3	250	63	811	1343	0.186	250	259	0.2	0.2	3.293	A
4	326	82	454	1345	0.243	326	606	0.2	0.3	3.533	A
5	99	25	651	863	0.115	99	130	0.1	0.1	4.714	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	703	176	340	1940	0.363	703	577	0.4	0.6	2.908	A
2	693	173	618	1309	0.529	691	425	0.7	1.1	5.815	A
3	306	77	992	1229	0.249	306	316	0.2	0.3	3.897	A
4	399	100	556	1286	0.311	399	742	0.3	0.4	4.057	A
5	121	30	796	790	0.154	121	159	0.1	0.2	5.383	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	703	176	340	1939	0.363	703	578	0.6	0.6	2.911	A
2	693	173	618	1308	0.530	693	425	1.1	1.1	5.848	A
3	306	77	994	1228	0.249	306	317	0.3	0.3	3.905	A
4	399	100	557	1285	0.311	399	743	0.4	0.4	4.065	A
5	121	30	798	789	0.154	121	159	0.2	0.2	5.390	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	574	144	278	1981	0.290	575	473	0.6	0.4	2.560	A
2	566	141	506	1374	0.412	567	348	1.1	0.7	4.471	A
3	250	63	814	1341	0.186	251	259	0.3	0.2	3.301	A
4	326	82	456	1344	0.243	327	608	0.4	0.3	3.540	A
5	99	25	653	862	0.115	99	130	0.2	0.1	4.723	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	481	120	233	2012	0.239	481	396	0.4	0.3	2.352	A
2	474	118	423	1422	0.333	474	291	0.7	0.5	3.803	A
3	209	52	681	1424	0.147	210	217	0.2	0.2	2.966	A
4	273	68	382	1387	0.197	273	509	0.3	0.2	3.233	A
5	83	21	546	915	0.091	83	109	0.1	0.1	4.330	A

2023 + Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	5.47	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D8	2023 + Development	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D5*G1

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	779	100.000
2		ONE HOUR	✓	522	100.000
3		ONE HOUR	✓	479	100.000
4		ONE HOUR	✓	632	100.000
5		ONE HOUR	✓	249	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
From		1	2	3	4	5
	1	0	280	199	265	34
	2	152	0	128	169	73
	3	147	80	0	198	55
	4	343	170	110	0	9
	5	105	44	50	50	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
From		1	2	3	4	5
	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.48	3.84	0.9	A	715	1072
2	0.47	5.64	0.9	A	479	719
3	0.39	4.44	0.6	A	440	660
4	0.55	6.35	1.2	A	580	870
5	0.43	9.96	0.8	A	229	343

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	586	147	378	1914	0.306	585	560	0.0	0.4	2.705	A
2	393	98	532	1359	0.289	391	431	0.0	0.4	3.715	A
3	361	90	558	1501	0.240	360	366	0.0	0.3	3.151	A
4	476	119	405	1373	0.347	474	512	0.0	0.5	3.995	A
5	188	47	752	812	0.231	187	128	0.0	0.3	5.745	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	700	175	453	1863	0.376	700	670	0.4	0.6	3.092	A
2	469	117	637	1297	0.362	469	516	0.4	0.6	4.342	A
3	431	108	668	1432	0.301	430	438	0.3	0.4	3.590	A
4	568	142	485	1327	0.428	568	613	0.5	0.7	4.738	A
5	224	56	900	738	0.304	224	153	0.3	0.4	6.993	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	858	214	554	1795	0.478	856	820	0.6	0.9	3.831	A
2	575	144	779	1214	0.474	574	631	0.6	0.9	5.610	A
3	528	132	817	1339	0.394	527	536	0.4	0.6	4.428	A
4	696	174	594	1264	0.551	694	750	0.7	1.2	6.304	A
5	274	69	1101	637	0.431	273	187	0.4	0.7	9.856	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	858	214	556	1794	0.478	858	822	0.9	0.9	3.845	A
2	575	144	781	1213	0.474	575	633	0.9	0.9	5.640	A
3	528	132	819	1338	0.394	528	537	0.6	0.6	4.443	A
4	696	174	595	1263	0.551	696	752	1.2	1.2	6.351	A
5	274	69	1104	636	0.432	274	187	0.7	0.8	9.958	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	700	175	456	1862	0.376	701	674	0.9	0.6	3.105	A
2	469	117	639	1296	0.362	471	518	0.9	0.6	4.370	A
3	431	108	670	1431	0.301	432	440	0.6	0.4	3.605	A
4	568	142	487	1326	0.429	570	615	1.2	0.8	4.776	A
5	224	56	904	736	0.305	225	153	0.8	0.4	7.070	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	586	147	381	1912	0.307	587	563	0.6	0.4	2.717	A
2	393	98	535	1357	0.290	394	433	0.6	0.4	3.741	A
3	361	90	561	1499	0.241	361	368	0.4	0.3	3.166	A
4	476	119	407	1372	0.347	477	515	0.8	0.5	4.026	A
5	188	47	756	810	0.232	188	128	0.4	0.3	5.798	A

2023 + Development, Saturday

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	24.06	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D9	2023 + Development	Saturday	ONE HOUR	12:45	14:15	15	✓	Simple	D6*G1

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	1134	100.000
2		ONE HOUR	✓	647	100.000
3		ONE HOUR	✓	927	100.000
4		ONE HOUR	✓	786	100.000
5		ONE HOUR	✓	268	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
		1	2	3	4	5
From	1	0	244	353	449	88
	2	190	0	182	229	46
	3	386	183	0	265	92
	4	316	182	263	0	26
	5	119	59	49	41	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
From		1	2	3	4	5
	1	0	0	0	0	0
	2	0	0	0	0	0
	3	0	0	0	0	0
	4	0	0	0	0	0
	5	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.78	10.35	3.5	B	1041	1561
2	0.82	22.20	4.2	C	594	891
3	0.90	29.22	7.8	D	850	1275
4	0.88	29.12	6.6	D	722	1082
5	0.83	53.89	4.1	F	245	368

Main Results for each time segment

12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	854	213	581	1777	0.480	850	756	0.0	0.9	3.866	A
2	487	122	931	1125	0.433	484	500	0.0	0.8	5.591	A
3	698	174	781	1361	0.512	693	634	0.0	1.0	5.357	A
4	592	148	738	1180	0.502	588	737	0.0	1.0	6.041	A
5	201	50	1137	619	0.325	199	188	0.0	0.5	8.541	A

13:00 - 13:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1020	255	695	1700	0.600	1017	905	0.9	1.5	5.257	A
2	582	145	1114	1018	0.572	580	598	0.8	1.3	8.169	A
3	833	208	935	1265	0.658	830	759	1.0	1.9	8.202	A
4	707	177	883	1096	0.645	704	882	1.0	1.8	9.108	A
5	240	60	1361	507	0.474	239	225	0.5	0.9	13.334	B

13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1249	312	837	1604	0.778	1241	1091	1.5	3.4	9.720	A
2	713	178	1354	878	0.812	702	724	1.3	3.9	19.492	C
3	1020	255	1136	1139	0.896	1000	921	1.9	6.8	23.249	C
4	866	216	1067	989	0.875	850	1070	1.8	5.8	23.541	C
5	295	74	1643	366	0.805	285	273	0.9	3.3	40.298	E

13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1249	312	851	1595	0.783	1248	1109	3.4	3.5	10.351	B
2	713	178	1366	871	0.818	711	733	3.9	4.2	22.205	C
3	1020	255	1147	1133	0.901	1016	931	6.8	7.8	29.216	D
4	866	216	1082	980	0.883	863	1082	5.8	6.6	29.120	D
5	295	74	1668	354	0.833	291	276	3.3	4.1	53.895	F

13:45 - 14:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1020	255	720	1683	0.606	1027	935	3.5	1.6	5.553	A
2	582	145	1134	1007	0.578	593	613	4.2	1.4	8.930	A
3	833	208	951	1255	0.664	856	776	7.8	2.0	9.518	A
4	707	177	907	1082	0.654	726	900	6.6	1.9	10.597	B
5	240	60	1402	487	0.494	253	230	4.1	1.0	16.148	C

14:00 - 14:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	854	213	589	1772	0.482	856	766	1.6	0.9	3.943	A
2	487	122	940	1120	0.435	490	505	1.4	0.8	5.732	A
3	698	174	789	1357	0.514	701	641	2.0	1.1	5.526	A
4	592	148	746	1175	0.504	596	744	1.9	1.0	6.247	A
5	201	50	1151	612	0.329	203	190	1.0	0.5	8.852	A

S|C|P

APPENDIX 3

Manual Classified Turning Counts, Wrexham

DATE: THURSDAY 29th NOVEMBER 2018

LOCATION: HOLT ROAD / RETAIL / FARNDON STREET / BODHYFRYD

ARM: HOLT ROAD A534

TIME / CLASS	LEFT TO TESCO								STRAIGHT TO FARNDON STREET								STRAIGHT TO HOLT ROAD TOWN								RIGHT TO BODHYFRYD								TOTAL MOVEMENT FROM ARM
	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	
8:00 - 8:15	0	0	6	0	0	0	0	6	0	0	40	4	2	0	0	46	0	0	17	2	0	0	0	19	0	0	37	3	1	0	0	41	112
8:15 - 8:30	0	0	6	0	0	0	0	6	0	1	47	6	2	0	0	56	0	0	19	0	0	0	0	19	0	0	45	3	4	0	1	53	134
8:30 - 8:45	0	0	13	4	0	0	0	17	0	0	55	8	0	0	0	63	0	0	21	1	1	0	1	24	0	0	47	7	1	0	1	56	160
8:45 - 9:00	0	0	20	1	0	0	0	21	0	0	56	9	1	1	0	67	0	0	16	1	0	0	1	18	0	0	45	3	1	1	0	50	156
HOURLY TOTAL	0	0	45	5	0	0	0	50	0	1	198	27	5	1	0	232	0	0	73	4	1	0	2	80	0	0	174	16	7	1	2	200	562
PERIOD TOTAL	0	0	45	5	0	0	0	50	0	1	198	27	5	1	0	232	0	0	73	4	1	0	2	80	0	0	174	16	7	1	2	200	562

16:00 - 16:15	0	0	20	2	0	0	0	22	0	0	38	5	1	0	0	44	0	0	18	1	1	0	0	20	0	0	29	5	1	0	1	36	122
16:15 - 16:30	0	0	27	1	0	0	0	28	0	0	33	4	1	0	0	38	0	0	20	1	0	0	1	22	0	0	22	1	1	0	0	24	112
16:30 - 16:45	0	0	31	4	0	0	0	35	0	1	39	7	1	0	0	48	0	0	22	0	0	0	0	22	0	1	26	6	1	0	0	34	139
16:45 - 17:00	0	0	33	0	0	0	0	33	0	0	31	4	0	2	0	37	0	1	29	2	0	0	0	32	0	0	30	2	2	0	0	34	136
HOURLY TOTAL	0	0	111	7	0	0	0	118	0	1	141	20	3	2	0	167	0	1	89	4	1	0	1	96	0	1	107	14	5	0	1	128	509
17:00 - 17:15	0	0	38	2	0	0	0	40	0	0	27	3	0	0	0	30	1	0	21	0	0	0	1	23	0	0	28	3	2	0	0	33	126
17:15 - 17:30	0	0	34	1	0	0	0	35	0	0	38	3	1	1	1	44	0	0	17	1	0	0	0	18	0	0	27	3	0	0	0	30	127
17:30 - 17:45	0	2	19	1	0	0	0	22	0	1	33	8	0	0	0	42	0	0	13	0	0	0	1	14	0	0	31	3	1	0	1	36	114
17:45 - 18:00	0	0	22	2	0	0	0	24	0	1	34	5	0	0	0	40	0	0	11	1	0	0	0	12	0	0	25	6	0	0	0	31	107
HOURLY TOTAL	0	2	113	6	0	0	0	121	0	2	132	19	1	1	1	156	1	0	62	2	0	0	2	67	0	0	111	15	3	0	1	130	474
PERIOD TOTAL	0	2	224	13	0	0	0	239	0	3	273	39	4	3	1	323	1	1	151	6	1	0	3	163	0	1	218	29	8	0	2	258	983

DATE: SATURDAY 24th NOVEMBER 2018

13:00 - 13:15	0	0	39	4	0	0	0	43	0	0	48	5	0	0	0	53	0	0	11	0	0	0	0	11	0	0	47	3	0	0	0	50	157
13:15 - 13:30	0	0	40	2	0	0	0	42	0	0	51	2	0	0	1	54	0	0	9	1	0	0	1	11	0	0	35	5	0	0	0	40	147
13:30 - 13:45	0	0	44	4	0	0	0	48	0	0	57	0	0	0	0	57	0	0	12	0	0	0	0	12	0	0	41	2	0	0	1	44	161
13:45 - 14:00	0	0	35	2	0	0	0	37	0	0	47	2	0	0	0	49	0	0	6	0	0	0	1	7	0	0	30	1	0	0	0	31	124
HOURLY TOTAL	0	0	158	12	0	0	0	170	0	0	203	9	0	0	1	213	0	0	38	1	0	0	2	41	0	0	153	11	0	0	1	165	589
PERIOD TOTAL	0	0	158	12	0	0	0	170	0	0	203	9	0	0	1	213	0	0	38	1	0	0	2	41	0	0	153	11	0	0	1	165	589

survey and presentation by **trafficsense** Ltd.

Manual Classified Turning Counts, Wrexham

DATE: THURSDAY 29th NOVEMBER 2018

LOCATION: HOLT ROAD / RETAIL / FARNDON STREET / BODHYFRYD

ARM: TESCO

TIME / CLASS	LEFT TO FARNDON STREET								STRAIGHT TO HOLT ROAD TOWN								RIGHT TO BODHYFRYD								RIGHT TO HOLT ROAD A534								TOTAL MOVEMENT FROM ARM
	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	
8:00 - 8:15	0	0	18	3	0	0	0	21	0	0	2	1	0	0	0	3	0	0	15	2	0	0	0	17	0	0	4	2	0	0	0	6	47
8:15 - 8:30	0	0	26	3	0	0	0	29	0	0	6	0	0	0	0	6	0	0	19	2	0	0	0	21	0	0	7	4	0	0	0	11	67
8:30 - 8:45	0	1	22	6	1	0	0	30	0	0	9	1	0	0	0	10	0	0	16	0	2	0	0	18	0	0	14	3	1	0	0	18	76
8:45 - 9:00	1	0	28	5	0	0	0	34	0	0	4	0	0	0	0	4	0	0	11	1	1	1	0	14	0	1	11	3	0	0	0	15	67
HOURLY TOTAL	1	1	94	17	1	0	0	114	0	0	21	2	0	0	0	23	0	0	61	5	3	1	0	70	0	1	36	12	1	0	0	50	257
PERIOD TOTAL	1	1	94	17	1	0	0	114	0	0	21	2	0	0	0	23	0	0	61	5	3	1	0	70	0	1	36	12	1	0	0	50	257

16:00 - 16:15	0	0	29	4	1	0	0	34	0	1	11	0	0	0	0	12	0	0	19	2	0	0	0	21	0	0	16	3	0	0	0	19	86
16:15 - 16:30	0	0	35	4	1	0	0	40	0	0	8	0	0	0	0	8	0	0	22	2	0	0	0	24	0	0	19	5	1	0	0	25	97
16:30 - 16:45	0	0	37	5	0	0	0	42	0	0	15	1	0	0	0	16	0	0	26	3	0	0	0	29	0	0	21	3	0	0	0	24	111
16:45 - 17:00	0	0	39	3	2	0	0	44	0	0	12	1	0	0	0	13	0	1	31	1	0	0	0	33	0	0	15	2	0	0	0	17	107
HOURLY TOTAL	0	0	140	16	4	0	0	160	0	1	46	2	0	0	0	49	0	1	98	8	0	0	0	107	0	0	71	13	1	0	0	85	401
17:00 - 17:15	0	0	41	2	0	0	0	43	0	0	16	0	0	0	0	16	0	1	28	5	1	1	0	36	0	0	15	1	0	0	0	16	111
17:15 - 17:30	0	0	44	6	1	0	0	51	0	0	9	1	0	0	0	10	0	0	27	3	0	0	0	30	0	0	19	5	0	0	0	24	115
17:30 - 17:45	0	0	46	2	1	0	0	49	0	0	14	0	0	0	0	14	0	0	30	2	1	0	0	33	0	0	13	2	0	0	0	15	111
17:45 - 18:00	0	0	38	3	0	0	0	41	0	0	11	0	0	0	0	11	0	0	24	4	0	0	0	28	0	0	16	2	1	0	0	19	99
HOURLY TOTAL	0	0	169	13	2	0	0	184	0	0	50	1	0	0	0	51	0	1	109	14	2	1	0	127	0	0	63	10	1	0	0	74	436
PERIOD TOTAL	0	0	309	29	6	0	0	344	0	1	96	3	0	0	0	100	0	2	207	22	2	1	0	234	0	0	134	23	2	0	0	159	837

DATE: SATURDAY 24th NOVEMBER 2018

13:00 - 13:15	0	0	54	5	0	0	0	59	0	0	15	0	0	0	0	15	0	0	63	6	0	0	0	69	0	0	39	4	0	0	0	43	186
13:15 - 13:30	0	0	67	7	0	0	0	74	0	0	22	1	0	0	0	23	0	0	97	3	0	0	0	100	0	0	40	4	0	0	0	44	241
13:30 - 13:45	0	0	49	4	0	0	0	53	0	0	24	0	0	0	0	24	0	0	85	4	0	0	0	89	0	0	39	5	0	0	0	44	210
13:45 - 14:00	0	0	55	7	0	0	0	62	0	0	24	0	0	0	0	24	0	0	74	3	0	0	0	77	0	0	36	4	0	0	0	40	203
HOURLY TOTAL	0	0	225	23	0	0	0	248	0	0	85	1	0	0	0	86	0	0	319	16	0	0	0	335	0	0	154	17	0	0	0	171	840
PERIOD TOTAL	0	0	225	23	0	0	0	248	0	0	85	1	0	0	0	86	0	0	319	16	0	0	0	335	0	0	154	17	0	0	0	171	840

survey and presentation by **trafficsense** Ltd.

Manual Classified Turning Counts, Wrexham

DATE: THURSDAY 29th NOVEMBER 2018

LOCATION: HOLT ROAD / RETAIL / FARNDON STREET / BODHYFRYD

ARM: FARNDON STREET

TIME / CLASS	LEFT TO HOLT ROAD TOWN								STRAIGHT TO BODHYFRYD								RIGHT TO HOLT ROAD A534								RIGHT TO TESCO								TOTAL MOVEMENT FROM ARM
	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	
8:00 - 8:15	0	0	0	0	0	0	0	0	0	0	29	3	1	0	0	33	0	0	15	6	1	0	0	22	0	0	17	2	0	0	0	19	74
8:15 - 8:30	0	0	2	0	0	0	0	2	0	1	27	7	0	0	0	35	0	0	22	3	1	1	2	29	0	0	13	5	0	0	0	18	84
8:30 - 8:45	0	0	2	0	0	0	0	2	0	0	33	5	1	0	0	39	0	0	25	6	1	0	1	33	0	1	11	1	0	0	0	13	87
8:45 - 9:00	0	0	1	1	0	0	0	2	0	0	34	5	0	0	0	39	0	0	21	2	1	0	0	24	0	0	12	3	0	0	0	15	80
HOURLY TOTAL	0	0	5	1	0	0	0	6	0	1	123	20	2	0	0	146	0	0	83	17	4	1	3	108	0	1	53	11	0	0	0	65	325
PERIOD TOTAL	0	0	5	1	0	0	0	6	0	1	123	20	2	0	0	146	0	0	83	17	4	1	3	108	0	1	53	11	0	0	0	65	325

16:00 - 16:15	0	0	2	0	0	0	0	2	0	0	50	4	2	1	0	57	0	0	29	3	0	0	0	32	0	0	22	3	0	0	0	25	116
16:15 - 16:30	0	0	3	1	0	0	0	4	1	0	52	5	2	0	0	60	1	0	35	5	1	0	1	43	0	0	26	2	0	0	0	28	135
16:30 - 16:45	0	0	1	0	0	0	0	1	0	0	64	3	0	1	0	68	0	0	31	5	2	1	1	40	0	0	21	2	1	0	0	24	133
16:45 - 17:00	0	0	3	0	0	0	0	3	0	0	59	7	0	0	0	66	0	0	24	4	0	1	1	30	0	0	20	4	0	0	0	24	123
HOURLY TOTAL	0	0	9	1	0	0	0	10	1	0	225	19	4	2	0	251	1	0	119	17	3	2	3	145	0	0	89	11	1	0	0	101	507
17:00 - 17:15	0	0	3	0	0	0	0	3	0	0	77	4	1	0	1	83	0	0	38	6	1	0	1	46	0	0	19	3	0	0	0	22	154
17:15 - 17:30	0	0	1	1	0	0	0	2	0	0	71	9	2	1	0	83	0	0	33	2	1	0	0	36	0	0	24	1	0	0	0	25	146
17:30 - 17:45	0	0	2	0	0	0	0	2	0	1	68	6	0	0	0	75	0	0	31	5	0	1	1	38	0	0	26	2	1	0	0	29	144
17:45 - 18:00	0	0	1	0	0	0	0	1	0	0	55	5	0	0	0	60	0	0	29	6	0	0	0	35	0	0	24	2	0	0	0	26	122
HOURLY TOTAL	0	0	7	1	0	0	0	8	0	1	271	24	3	1	1	301	0	0	131	19	2	1	2	155	0	0	93	8	1	0	0	102	566
PERIOD TOTAL	0	0	16	2	0	0	0	18	1	1	496	43	7	3	1	552	1	0	250	36	5	3	5	300	0	0	182	19	2	0	0	203	1073

DATE: SATURDAY 24th NOVEMBER 2018

13:00 - 13:15	0	0	5	0	0	0	0	5	0	0	70	4	0	0	0	74	0	0	47	4	0	0	1	52	0	0	53	2	0	0	0	55	186
13:15 - 13:30	0	0	7	1	0	0	0	8	0	0	65	6	0	0	0	71	0	0	31	5	0	0	0	36	0	0	56	3	0	0	0	59	174
13:30 - 13:45	0	0	7	0	0	0	0	7	0	0	64	1	1	0	0	66	0	0	38	3	0	0	0	41	0	0	60	3	2	0	0	65	179
13:45 - 14:00	0	0	4	0	0	0	0	4	0	0	58	3	1	0	0	62	0	0	34	4	0	0	1	39	0	0	61	5	0	0	0	66	171
HOURLY TOTAL	0	0	23	1	0	0	0	24	0	0	257	14	2	0	0	273	0	0	150	16	0	0	2	168	0	0	230	13	2	0	0	245	710
PERIOD TOTAL	0	0	23	1	0	0	0	24	0	0	257	14	2	0	0	273	0	0	150	16	0	0	2	168	0	0	230	13	2	0	0	245	710

survey and presentation by **trafficsense** Ltd.

Manual Classified Turning Counts, Wrexham

DATE: THURSDAY 29th NOVEMBER 2018

LOCATION: HOLT ROAD / RETAIL / FARNDON STREET / BODHYFRYD

ARM: HOLT ROAD TOWN

TIME / CLASS	LEFT TO BODHYFRYD								STRAIGHT TO HOLT ROAD A534								RIGHT TO TESCO								RIGHT TO FARNDON STREET								TOTAL MOVEMENT FROM ARM
	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	
8:00 - 8:15	0	0	5	0	0	0	0	5	0	0	5	0	0	0	0	5	0	0	2	1	0	0	0	3	0	0	2	0	0	0	0	2	15
8:15 - 8:30	0	1	9	1	0	0	0	11	0	0	9	0	0	0	0	9	0	0	6	0	0	0	0	6	0	0	0	1	0	0	0	1	27
8:30 - 8:45	0	0	11	0	0	0	2	13	0	0	7	1	0	0	0	8	0	0	4	0	0	0	0	4	0	0	4	1	0	0	0	5	30
8:45 - 9:00	0	0	6	2	0	0	1	9	0	0	9	0	0	0	1	10	0	0	5	1	0	0	0	6	0	0	1	0	0	0	0	1	26
HOURLY TOTAL	0	1	31	3	0	0	3	38	0	0	30	1	0	0	1	32	0	0	17	2	0	0	0	19	0	0	7	2	0	0	0	9	98
PERIOD TOTAL	0	1	31	3	0	0	3	38	0	0	30	1	0	0	1	32	0	0	17	2	0	0	0	19	0	0	7	2	0	0	0	9	98

16:00 - 16:15	0	0	25	3	0	0	1	29	0	0	22	5	0	0	0	27	0	0	9	1	0	0	0	10	0	0	5	0	0	0	0	5	71
16:15 - 16:30	0	0	27	5	0	0	1	33	0	0	19	2	0	0	0	21	0	0	7	0	0	0	0	7	0	0	8	1	0	0	0	9	70
16:30 - 16:45	0	0	27	2	0	0	1	30	0	0	26	3	0	0	0	29	0	0	10	0	0	0	0	10	0	0	4	1	0	0	0	5	74
16:45 - 17:00	0	0	31	2	0	0	0	33	0	1	25	3	1	0	0	30	0	0	6	1	0	0	0	7	0	0	8	2	0	0	0	10	80
HOURLY TOTAL	0	0	110	12	0	0	3	125	0	1	92	13	1	0	0	107	0	0	32	2	0	0	0	34	0	0	25	4	0	0	0	29	295
17:00 - 17:15	0	0	32	3	1	0	1	37	0	0	21	1	1	0	0	23	0	0	11	0	0	0	0	11	0	0	16	1	0	0	0	17	88
17:15 - 17:30	0	0	35	4	0	0	1	40	0	0	19	4	0	0	0	23	0	0	9	1	0	0	0	10	0	1	9	2	0	0	0	12	85
17:30 - 17:45	0	0	31	1	0	0	0	32	0	1	22	2	0	0	0	25	0	0	10	0	0	0	0	10	0	0	10	0	0	0	0	10	77
17:45 - 18:00	0	0	34	2	0	0	0	36	0	0	25	2	0	0	0	27	0	0	10	0	0	0	0	10	0	0	8	1	0	0	0	9	82
HOURLY TOTAL	0	0	132	10	1	0	2	145	0	1	87	9	1	0	0	98	0	0	40	1	0	0	0	41	0	1	43	4	0	0	0	48	332
PERIOD TOTAL	0	0	242	22	1	0	5	270	0	2	179	22	2	0	0	205	0	0	72	3	0	0	0	75	0	1	68	8	0	0	0	77	627

DATE: SATURDAY 24th NOVEMBER 2018

13:00 - 13:15	0	0	25	0	0	0	0	25	0	0	17	0	0	0	0	17	0	0	13	0	0	0	0	13	0	0	11	0	0	0	0	11	66
13:15 - 13:30	0	0	25	0	0	0	0	25	0	0	11	1	0	0	0	12	0	0	11	0	0	0	0	11	0	0	9	0	0	0	0	9	57
13:30 - 13:45	0	0	22	1	0	0	0	23	0	0	13	0	0	0	0	13	0	0	10	0	0	0	0	10	0	0	8	0	0	0	0	8	54
13:45 - 14:00	0	0	28	2	0	0	0	30	0	0	12	1	0	0	0	13	0	0	11	1	0	0	0	12	0	0	9	1	0	0	0	10	65
HOURLY TOTAL	0	0	100	3	0	0	0	103	0	0	53	2	0	0	0	55	0	0	45	1	0	0	0	46	0	0	37	1	0	0	0	38	242
PERIOD TOTAL	0	0	100	3	0	0	0	103	0	0	53	2	0	0	0	55	0	0	45	1	0	0	0	46	0	0	37	1	0	0	0	38	242

survey and presentation by **trafficsense** Ltd.

Manual Classified Turning Counts, Wrexham

DATE: THURSDAY 29th NOVEMBER 2018

LOCATION: HOLT ROAD / RETAIL / FARNDON STREET / BODHYFRYD

ARM: BODHYFRYD

TIME / CLASS	LEFT TO HOLT ROAD A534								LEFT TO TESCO								STRAIGHT TO FARNDON STREET								RIGHT TO HOLT ROAD TOWN								TOTAL MOVEMENT FROM ARM
	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	
8:00 - 8:15	0	0	31	5	0	0	0	36	0	0	27	4	1	0	0	32	0	0	44	9	2	0	1	56	0	0	3	0	0	0	0	3	127
8:15 - 8:30	0	0	30	2	1	0	1	34	0	0	31	3	0	0	0	34	0	0	49	11	0	0	1	61	0	0	2	0	0	0	0	2	131
8:30 - 8:45	0	0	33	6	1	0	0	40	0	0	27	4	1	0	0	32	0	0	62	5	1	0	0	68	0	0	6	1	0	0	0	7	147
8:45 - 9:00	0	0	39	3	2	0	1	45	0	1	26	4	2	0	0	33	0	0	70	6	1	0	0	77	0	0	9	0	0	0	1	10	165
HOURLY TOTAL	0	0	133	16	4	0	2	155	0	1	111	15	4	0	0	131	0	0	225	31	4	0	2	262	0	0	20	1	0	0	1	22	570
PERIOD TOTAL	0	0	133	16	4	0	2	155	0	1	111	15	4	0	0	131	0	0	225	31	4	0	2	262	0	0	20	1	0	0	1	22	570

16:00 - 16:15	0	0	44	2	0	0	0	46	0	0	39	5	0	0	0	44	0	0	55	4	0	0	0	59	0	0	8	0	0	0	0	8	157
16:15 - 16:30	0	0	58	6	0	0	0	64	0	0	33	2	1	0	0	36	0	0	49	9	0	0	2	60	0	1	5	1	0	0	1	8	168
16:30 - 16:45	0	0	52	4	1	0	1	58	0	1	39	3	0	0	0	43	0	0	56	5	1	0	1	63	0	0	13	1	0	0	0	14	178
16:45 - 17:00	0	0	52	4	0	0	0	56	0	1	45	3	0	1	0	50	0	0	51	7	0	0	0	58	1	0	6	1	0	0	1	9	173
HOURLY TOTAL	0	0	206	16	1	0	1	224	0	2	156	13	1	1	0	173	0	0	211	25	1	0	3	240	1	1	32	3	0	0	2	39	676
17:00 - 17:15	0	1	59	4	0	0	0	64	0	0	40	4	2	0	0	46	0	0	49	3	1	0	0	53	0	0	12	0	0	0	1	13	176
17:15 - 17:30	0	0	50	5	0	0	0	55	0	0	39	4	1	0	0	44	0	0	55	5	0	0	0	60	0	0	8	0	0	0	0	8	167
17:30 - 17:45	0	0	54	2	1	0	1	58	0	0	41	2	0	0	0	43	0	0	53	4	0	0	1	58	0	0	4	0	0	0	0	4	163
17:45 - 18:00	0	0	66	2	0	0	0	68	0	0	33	5	1	0	0	39	0	0	52	7	1	0	0	60	0	0	6	0	0	0	0	6	173
HOURLY TOTAL	0	1	229	13	1	0	1	245	0	0	153	15	4	0	0	172	0	0	209	19	2	0	1	231	0	0	30	0	0	0	1	31	679
PERIOD TOTAL	0	1	435	29	2	0	2	469	0	2	309	28	5	1	0	345	0	0	420	44	3	0	4	471	1	1	62	3	0	0	3	70	1355

DATE: SATURDAY 24th NOVEMBER 2018

13:00 - 13:15	0	0	51	3	0	0	1	55	0	0	79	5	0	0	0	84	0	1	98	9	0	0	0	108	0	0	21	0	0	0	0	21	268
13:15 - 13:30	0	0	56	7	0	0	0	63	0	0	73	8	0	0	0	81	0	0	99	7	0	0	0	106	0	0	18	1	0	0	1	20	270
13:30 - 13:45	0	0	40	3	0	0	0	43	0	0	64	5	0	0	0	69	0	0	80	0	0	0	0	80	0	0	18	0	0	0	0	18	210
13:45 - 14:00	0	0	47	3	0	0	0	50	0	0	69	4	0	0	0	73	0	0	95	3	0	0	0	98	0	0	17	0	0	0	0	17	238
HOURLY TOTAL	0	0	194	16	0	0	1	211	0	0	285	22	0	0	0	307	0	1	372	19	0	0	0	392	0	0	74	1	0	0	1	76	986
PERIOD TOTAL	0	0	194	16	0	0	1	211	0	0	285	22	0	0	0	307	0	1	372	19	0	0	0	392	0	0	74	1	0	0	1	76	986

survey and presentation by **trafficsense** Ltd.

Manual Classified Turning Counts, Wrexham

DATE: THURSDAY 29th NOVEMBER 2018

LOCATION: CHESTER ROAD / POWELL ROAD

ARM: CHESTER ROAD NORTH

TIME / CLASS	LEFT TO POWELL ROAD EAST								STRAIGHT TO CHESTER ROAD SOUTH								RIGHT TO POWELL ROAD WEST								TOTAL MOVEMENT FROM ARM
	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	
8:00 - 8:15	0	0	35	6	2	0	1	44	0	0	14	3	1	0	0	18	0	0	40	3	0	0	2	45	107
8:15 - 8:30	0	1	44	8	1	0	1	55	0	0	40	1	0	0	0	41	0	0	72	5	0	0	0	77	173
8:30 - 8:45	0	0	54	4	1	0	0	59	0	0	51	4	1	0	0	56	0	0	70	1	0	0	2	73	188
8:45 - 9:00	0	0	64	4	2	0	0	70	0	0	59	3	0	0	0	62	0	0	72	2	0	0	2	76	208
HOURLY TOTAL	0	1	197	22	6	0	2	228	0	0	164	11	2	0	0	177	0	0	254	11	0	0	6	271	676
PERIOD TOTAL	0	1	197	22	6	0	2	228	0	0	164	11	2	0	0	177	0	0	254	11	0	0	6	271	676

16:00 - 16:15	0	0	47	8	1	0	0	56	0	0	27	2	0	0	0	29	0	1	33	8	1	0	1	44	129
16:15 - 16:30	0	0	65	11	0	0	0	76	0	0	16	1	0	0	0	17	0	0	26	2	0	0	3	31	124
16:30 - 16:45	0	1	47	5	1	0	0	54	0	0	19	3	0	0	0	22	0	0	31	1	0	1	1	34	110
16:45 - 17:00	0	0	61	3	0	0	0	64	0	0	24	1	0	0	0	25	0	1	29	1	0	0	2	33	122
HOURLY TOTAL	0	1	220	27	2	0	0	250	0	0	86	7	0	0	0	93	0	2	119	12	1	1	7	142	485
17:00 - 17:15	1	0	49	2	0	0	0	52	0	0	18	2	0	0	0	20	0	0	25	2	0	0	3	30	102
17:15 - 17:30	0	0	58	6	0	0	0	64	0	0	22	1	0	0	0	23	0	0	33	0	0	0	2	35	122
17:30 - 17:45	0	0	37	3	0	0	0	40	0	0	20	1	1	0	0	22	0	0	27	3	0	0	1	31	93
17:45 - 18:00	0	0	45	2	1	0	0	48	0	0	17	1	0	0	0	18	0	0	22	0	0	0	1	23	89
HOURLY TOTAL	1	0	189	13	1	0	0	204	0	0	77	5	1	0	0	83	0	0	107	5	0	0	7	119	406
PERIOD TOTAL	0	1	220	27	2	0	0	250	0	0	86	7	0	0	0	93	0	2	119	12	1	1	7	142	485

DATE: SATURDAY 24th NOVEMBER 2018

13:00 - 13:15	0	0	50	4	0	0	0	54	0	0	27	1	0	0	0	28	0	0	33	0	0	0	0	33	115
13:15 - 13:30	0	0	60	6	0	0	0	66	0	0	34	4	0	0	0	38	0	0	36	0	0	0	3	39	143
13:30 - 13:45	0	0	41	0	0	0	0	41	0	0	15	2	0	0	0	17	0	0	30	2	0	0	1	33	91
13:45 - 14:00	0	0	68	3	0	0	0	71	0	0	23	0	0	0	0	23	0	0	36	0	0	0	2	38	132
HOURLY TOTAL	0	0	219	13	0	0	0	232	0	0	99	7	0	0	0	106	0	0	135	2	0	0	6	143	481
PERIOD TOTAL	0	0	219	13	0	0	0	232	0	0	99	7	0	0	0	106	0	0	135	2	0	0	6	143	481

survey and presentation by **trafficsense** Ltd.

Manual Classified Turning Counts, Wrexham

DATE: THURSDAY 29th NOVEMBER 2018

LOCATION: CHESTER ROAD / POWELL ROAD

ARM: POWELL ROAD EAST

TIME / CLASS	LEFT TO CHESTER ROAD SOUTH								STRAIGHT TO POWELL ROAD WEST								RIGHT TO CHESTER ROAD NORTH								TOTAL MOVEMENT FROM ARM
	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	
8:00 - 8:15	0	0	1	0	0	0	0	1	0	0	58	9	0	0	0	67	0	0	21	5	1	0	0	27	95
8:15 - 8:30	0	0	7	0	0	0	0	7	0	0	74	12	2	0	0	88	0	0	20	7	1	1	0	29	124
8:30 - 8:45	0	0	3	0	0	0	0	3	0	0	60	12	0	1	2	75	0	0	15	7	0	0	0	22	100
8:45 - 9:00	0	0	4	1	0	0	0	5	0	0	80	11	1	1	0	93	0	0	25	1	0	0	0	26	124
HOURLY TOTAL	0	0	15	1	0	0	0	16	0	0	272	44	3	2	2	323	0	0	81	20	2	1	0	104	443
PERIOD TOTAL	0	0	15	1	0	0	0	16	0	0	272	44	3	2	2	323	0	0	81	20	2	1	0	104	443

16:00 - 16:15	0	0	4	0	0	0	0	4	0	0	125	14	1	0	0	140	0	0	57	3	0	0	1	61	205
16:15 - 16:30	0	0	1	1	0	0	0	2	0	0	110	9	0	0	0	119	0	0	54	5	1	0	0	60	181
16:30 - 16:45	0	0	3	0	0	0	0	3	0	0	128	14	0	0	1	143	0	0	52	7	0	0	0	59	205
16:45 - 17:00	0	0	0	1	0	0	0	1	0	2	134	12	0	0	0	148	0	0	0	8	1	0	0	9	158
HOURLY TOTAL	0	0	8	2	0	0	0	10	0	2	497	49	1	0	1	550	0	0	163	23	2	0	1	189	749
17:00 - 17:15	0	0	1	0	0	0	0	1	0	2	132	8	0	0	0	142	0	0	55	6	0	0	0	61	204
17:15 - 17:30	0	0	6	0	0	0	0	6	2	1	131	6	0	0	0	140	0	0	59	5	0	0	0	64	210
17:30 - 17:45	0	0	4	0	0	0	0	4	0	0	115	6	1	0	1	123	0	1	47	6	0	0	0	54	181
17:45 - 18:00	0	0	2	1	0	0	0	3	1	2	121	7	0	0	0	131	0	0	61	4	0	0	0	65	199
HOURLY TOTAL	0	0	13	1	0	0	0	14	3	5	499	27	1	0	1	536	0	1	222	21	0	0	0	244	794
PERIOD TOTAL	0	0	8	2	0	0	0	10	0	2	497	49	1	0	1	550	0	0	163	23	2	0	1	189	749

DATE: SATURDAY 24th NOVEMBER 2018

13:00 - 13:15	0	0	2	0	0	0	0	2	0	2	115	10	0	0	0	127	0	0	59	2	0	0	0	61	190
13:15 - 13:30	0	0	1	0	0	0	0	1	0	0	135	13	0	0	0	148	0	0	58	2	0	0	0	60	209
13:30 - 13:45	0	0	1	0	0	0	0	1	0	0	156	1	0	0	1	158	0	0	42	5	0	0	0	47	206
13:45 - 14:00	0	0	9	1	0	0	0	10	0	1	130	3	0	0	0	134	0	0	52	3	0	0	0	55	199
HOURLY TOTAL	0	0	13	1	0	0	0	14	0	3	536	27	0	0	1	567	0	0	211	12	0	0	0	223	804
PERIOD TOTAL	0	0	13	1	0	0	0	14	0	3	536	27	0	0	1	567	0	0	211	12	0	0	0	223	804

survey and presentation by **traffic sense** Ltd.

Manual Classified Turning Counts, Wrexham

DATE: THURSDAY 29th NOVEMBER 2018

LOCATION: CHESTER ROAD / POWELL ROAD

ARM: CHESTER ROAD SOUTH

TIME / CLASS	LEFT TO POWELL ROAD WEST								STRAIGHT TO CHESTER ROAD NORTH								RIGHT TO POWELL ROAD EAST								TOTAL MOVEMENT FROM ARM
	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	
8:00 - 8:15	0	1	26	1	0	0	0	28	0	0	11	1	0	0	0	12	0	0	1	1	1	0	0	3	43
8:15 - 8:30	0	0	33	3	0	0	1	37	0	0	11	3	0	0	0	14	0	0	3	0	0	0	0	3	54
8:30 - 8:45	0	1	31	5	0	0	1	38	0	0	23	2	0	0	0	25	0	0	6	0	0	0	0	6	69
8:45 - 9:00	0	0	35	8	0	0	2	45	0	0	30	8	0	0	0	38	0	0	11	0	0	0	0	11	94
HOURLY TOTAL	0	2	125	17	0	0	4	148	0	0	75	14	0	0	0	89	0	0	21	1	1	0	0	23	260
PERIOD TOTAL	0	2	125	17	0	0	4	148	0	0	75	14	0	0	0	89	0	0	21	1	1	0	0	23	260

16:00 - 16:15	0	0	71	7	0	0	2	80	0	0	38	4	0	0	0	42	0	0	8	1	0	0	0	9	131
16:15 - 16:30	0	0	87	11	0	0	0	98	0	0	27	1	1	0	0	29	0	0	10	0	0	0	0	10	137
16:30 - 16:45	0	0	85	6	0	0	2	93	0	0	25	1	0	0	0	26	0	0	9	0	0	0	0	9	128
16:45 - 17:00	0	0	82	3	0	0	1	86	0	0	16	2	0	0	0	18	0	0	10	1	0	0	0	11	115
HOURLY TOTAL	0	0	325	27	0	0	5	357	0	0	106	8	1	0	0	115	0	0	37	2	0	0	0	39	511
17:00 - 17:15	0	0	81	6	0	0	2	89	0	0	21	3	0	0	0	24	0	0	11	0	0	0	0	11	124
17:15 - 17:30	0	0	75	4	0	0	1	80	0	0	26	1	0	0	0	27	0	0	7	1	0	0	0	8	115
17:30 - 17:45	0	1	77	3	0	0	2	83	0	0	23	1	0	0	0	24	0	0	4	0	0	0	0	4	111
17:45 - 18:00	0	0	72	3	0	0	0	75	0	0	18	2	0	0	0	20	0	0	5	0	0	0	0	5	100
HOURLY TOTAL	0	1	305	16	0	0	5	327	0	0	88	7	0	0	0	95	0	0	27	1	0	0	0	28	450
PERIOD TOTAL	0	0	325	27	0	0	5	357	0	0	106	8	1	0	0	115	0	0	37	2	0	0	0	39	511

DATE: SATURDAY 24th NOVEMBER 2018

13:00 - 13:15	0	0	73	1	0	0	0	74	0	0	20	1	0	0	0	21	0	0	12	1	0	0	0	13	108
13:15 - 13:30	0	0	62	1	0	0	3	66	0	0	21	0	0	0	0	21	0	0	7	1	0	0	0	8	95
13:30 - 13:45	0	0	65	1	0	0	1	67	0	0	29	0	0	0	0	29	0	0	5	0	0	0	0	5	101
13:45 - 14:00	0	0	66	2	0	0	1	69	0	0	21	1	0	0	0	22	0	0	4	0	0	0	0	4	95
HOURLY TOTAL	0	0	266	5	0	0	5	276	0	0	91	2	0	0	0	93	0	0	28	2	0	0	0	30	399
PERIOD TOTAL	0	0	266	5	0	0	5	276	0	0	91	2	0	0	0	93	0	0	28	2	0	0	0	30	399

survey and presentation by **trafficsense** Ltd.

Manual Classified Turning Counts, Wrexham

DATE: THURSDAY 29th NOVEMBER 2018

LOCATION: CHESTER ROAD / POWELL ROAD

ARM: POWELL ROAD WEST

TIME / CLASS	LEFT TO CHESTER ROAD NORTH								STRAIGHT TO POWELL ROAD EAST								RIGHT TO CHESTER ROAD SOUTH								TOTAL MOVEMENT FROM ARM
	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV 1	OGV 2	BUS COACH	TOTAL	
8:00 - 8:15	0	0	2	2	0	0	0	4	1	0	75	8	1	0	0	85	0	0	27	1	0	0	1	29	118
8:15 - 8:30	0	0	1	0	0	0	0	1	0	2	81	15	1	0	2	101	0	0	51	1	0	0	2	54	156
8:30 - 8:45	0	0	6	1	0	0	0	7	0	0	94	10	1	0	1	106	0	0	52	4	0	0	1	57	170
8:45 - 9:00	0	0	10	0	0	0	0	10	0	0	92	18	1	1	0	112	0	0	66	4	0	0	1	71	193
HOURLY TOTAL	0	0	19	3	0	0	0	22	1	2	342	51	4	1	3	404	0	0	196	10	0	0	5	211	637
PERIOD TOTAL	0	0	19	3	0	0	0	22	1	2	342	51	4	1	3	404	0	0	196	10	0	0	5	211	637

16:00 - 16:15	0	0	9	0	0	0	0	9	0	1	123	8	0	1	0	133	0	0	44	8	0	0	2	54	196
16:15 - 16:30	0	0	7	2	0	0	0	9	0	0	119	15	0	0	0	134	0	1	40	7	0	0	0	48	191
16:30 - 16:45	0	0	3	0	0	0	0	3	0	0	126	13	0	0	2	141	0	0	37	8	1	0	2	48	192
16:45 - 17:00	0	0	8	2	0	0	0	10	1	0	127	7	0	0	0	135	0	0	30	4	0	0	3	37	182
HOURLY TOTAL	0	0	27	4	0	0	0	31	1	1	495	43	0	1	2	543	0	1	151	27	1	0	7	187	761
17:00 - 17:15	0	0	5	0	0	0	0	5	0	0	118	5	0	0	2	125	0	0	28	7	0	0	1	36	166
17:15 - 17:30	0	0	4	0	0	0	0	4	1	0	115	10	0	0	0	126	0	0	31	2	0	0	1	34	164
17:30 - 17:45	0	0	1	0	0	0	0	1	0	0	122	4	0	0	0	126	0	0	40	4	1	0	2	47	174
17:45 - 18:00	0	0	6	0	0	0	0	6	0	0	110	6	0	0	0	116	0	0	32	1	0	0	1	34	156
HOURLY TOTAL	0	0	16	0	0	0	0	16	1	0	465	25	0	0	2	493	0	0	131	14	1	0	5	151	660
PERIOD TOTAL	0	0	27	4	0	0	0	31	1	1	495	43	0	1	2	543	0	1	151	27	1	0	7	187	761

DATE: SATURDAY 24th NOVEMBER 2018

13:00 - 13:15	0	0	3	0	0	0	0	3	0	0	169	15	0	0	1	185	0	0	46	4	0	0	1	51	239
13:15 - 13:30	0	0	3	0	0	0	0	3	0	1	153	9	0	0	1	164	0	0	35	2	0	0	1	38	205
13:30 - 13:45	0	0	2	1	0	0	0	3	0	0	145	4	0	0	0	149	0	0	35	1	0	0	3	39	191
13:45 - 14:00	1	0	5	0	0	0	0	6	0	2	162	8	0	0	0	172	0	0	29	2	0	0	1	32	210
HOURLY TOTAL	1	0	13	1	0	0	0	15	0	3	629	36	0	0	2	670	0	0	145	9	0	0	6	160	845
PERIOD TOTAL	1	0	13	1	0	0	0	15	0	3	629	36	0	0	2	670	0	0	145	9	0	0	6	160	845

survey and presentation by **traffic sense** Ltd.

Queue Lengths, Wrexham

DATE: THURSDAY 29th NOVEMBER 2018

LOCATION: HOLT ROAD / RETAIL / FARNDON STREET / BODHYFRYD

ARM: HOLT ROAD A534

MAX QUEUE	LANE 1				LANE 2			
	LIGHTS	HEAVIES	QUEUE LENGTH (M)	%AGE HEAVIES	LIGHTS	HEAVIES	QUEUE LENGTH (M)	%AGE HEAVIES
8:00 - 8:05	4	0	22	0.0	0	0	0	0.0
8:05 - 8:10	3	1	31.5	25.0	1	0	5.5	0.0
8:10 - 8:15	5	0	27.5	0.0	0	0	0	0.0
8:15 - 8:20	3	0	16.5	0.0	1	0	5.5	0.0
8:20 - 8:25	4	0	22	0.0	2	0	11	0.0
8:25 - 8:30	6	0	33	0.0	1	0	5.5	0.0
8:30 - 8:35	8	0	44	0.0	2	0	11	0.0
8:35 - 8:40	6	0	33	0.0	1	0	5.5	0.0
8:40 - 8:45	4	0	22	0.0	2	0	11	0.0
8:45 - 8:50	6	0	33	0.0	3	0	16.5	0.0
8:50 - 8:55	4	1	37	20.0	1	0	5.5	0.0
8:55 - 9:00	3	0	16.5	0.0	2	0	11	0.0

16:00 - 16:05	4	0	22	0.0	1	0	5.5	0.0
16:05 - 16:10	5	1	42.5	16.7	2	0	11	0.0
16:10 - 16:15	6	0	33	0.0	2	0	11	0.0
16:15 - 16:20	5	0	27.5	0.0	3	0	16.5	0.0
16:20 - 16:25	6	0	33	0.0	1	0	5.5	0.0
16:25 - 16:30	7	0	38.5	0.0	2	0	11	0.0
16:30 - 16:35	5	0	27.5	0.0	3	0	16.5	0.0
16:35 - 16:40	6	0	33	0.0	1	0	5.5	0.0
16:40 - 16:45	4	0	22	0.0	1	0	5.5	0.0
16:45 - 16:50	5	1	42.5	16.7	0	0	0	0.0
16:50 - 16:55	6	0	33	0.0	2	0	11	0.0
16:55 - 17:00	4	0	22	0.0	3	0	16.5	0.0
17:00 - 17:05	5	0	27.5	0.0	1	0	5.5	0.0
17:05 - 17:10	6	1	48	14.3	2	0	11	0.0
17:10 - 17:15	4	0	22	0.0	0	0	0	0.0
17:15 - 17:20	2	0	11	0.0	1	0	5.5	0.0
17:20 - 17:25	3	0	16.5	0.0	2	0	11	0.0
17:25 - 17:30	6	0	33	0.0	3	0	16.5	0.0
17:30 - 17:35	4	0	22	0.0	1	0	5.5	0.0
17:35 - 17:40	5	0	27.5	0.0	2	0	11	0.0
17:40 - 17:45	6	1	48	14.3	3	0	16.5	0.0
17:45 - 17:50	4	0	22	0.0	1	0	5.5	0.0
17:45 - 17:50	6	0	33	0.0	2	0	11	0.0
17:50 - 17:55	5	0	27.5	0.0	2	0	11	0.0
17:50 - 17:55	6	0	33	0.0	2	0	11	0.0

DATE: SATURDAY 24th NOVEMBER 2018

13:00 - 13:05	7	0	38.5	0.0	2	0	11	0.0
13:05 - 13:10	6	1	48	14.3	2	0	11	0.0
13:10 - 13:15	5	0	27.5	0.0	3	0	16.5	0.0
13:15 - 13:20	9	0	49.5	0.0	3	0	16.5	0.0
13:20 - 13:25	10	0	55	0.0	4	0	22	0.0
13:25 - 13:30	8	0	44	0.0	2	0	11	0.0
13:30 - 13:35	9	1	64.5	10.0	3	0	16.5	0.0
13:35 - 13:40	7	0	38.5	0.0	1	0	5.5	0.0
13:40 - 13:45	8	0	44	0.0	2	0	11	0.0
13:45 - 13:50	9	0	49.5	0.0	3	0	16.5	0.0
13:50 - 13:55	10	1	70	9.1	1	0	5.5	0.0
13:55 - 14:00	7	0	38.5	0.0	1	0	5.5	0.0

ARM: TESCO

MAX QUEUE	LANE 1				LANE 2			
	LIGHTS	HEAVIES	QUEUE LENGTH (M)	%AGE HEAVIES	LIGHTS	HEAVIES	QUEUE LENGTH (M)	%AGE HEAVIES
8:00 - 8:05	0	0	0	0.0	2	0	11	0.0
8:05 - 8:10	1	0	5.5	0.0	3	0	16.5	0.0
8:10 - 8:15	0	0	0	0.0	4	0	22	0.0
8:15 - 8:20	1	0	5.5	0.0	5	0	27.5	0.0
8:20 - 8:25	2	0	11	0.0	2	0	11	0.0
8:25 - 8:30	1	0	5.5	0.0	3	0	16.5	0.0
8:30 - 8:35	0	0	0	0.0	4	0	22	0.0
8:35 - 8:40	1	0	5.5	0.0	2	0	11	0.0
8:40 - 8:45	1	0	5.5	0.0	3	0	16.5	0.0
8:45 - 8:50	0	0	0	0.0	1	0	5.5	0.0
8:50 - 8:55	2	0	11	0.0	2	0	11	0.0
8:55 - 9:00	1	0	5.5	0.0	3	0	16.5	0.0

16:00 - 16:05	4	0	22	0.0	4	0	22	0.0
16:05 - 16:10	5	0	27.5	0.0	5	0	27.5	0.0
16:10 - 16:15	3	0	16.5	0.0	3	0	16.5	0.0
16:15 - 16:20	4	0	22	0.0	6	0	33	0.0
16:20 - 16:25	2	0	11	0.0	4	0	22	0.0
16:25 - 16:30	3	0	16.5	0.0	5	0	27.5	0.0
16:30 - 16:35	4	0	22	0.0	6	0	33	0.0
16:35 - 16:40	2	0	11	0.0	4	0	22	0.0
16:40 - 16:45	3	0	16.5	0.0	5	0	27.5	0.0
16:45 - 16:50	5	0	27.5	0.0	6	0	33	0.0
16:50 - 16:55	3	0	16.5	0.0	4	0	22	0.0
16:55 - 17:00	6	0	33	0.0	2	0	11	0.0
17:00 - 17:05	4	0	22	0.0	3	0	16.5	0.0
17:05 - 17:10	2	0	11	0.0	4	0	22	0.0
17:10 - 17:15	3	0	16.5	0.0	2	0	11	0.0
17:15 - 17:20	4	0	22	0.0	3	0	16.5	0.0
17:20 - 17:25	2	0	11	0.0	6	0	33	0.0
17:25 - 17:30	3	0	16.5	0.0	4	0	22	0.0
17:30 - 17:35	6	0	33	0.0	2	0	11	0.0
17:35 - 17:40	5	0	27.5	0.0	3	0	16.5	0.0
17:40 - 17:45	6	0	33	0.0	4	0	22	0.0
17:45 - 17:50	2	0	11	0.0	2	0	11	0.0
17:45 - 17:50	3	0	16.5	0.0	3	0	16.5	0.0
17:50 - 17:55	2	0	11	0.0	4	0	22	0.0
17:50 - 17:55	3	0	16.5	0.0	3	0	16.5	0.0

13:00 - 13:05	4	0	22	0.0	7	0	38.5	0.0
13:05 - 13:10	5	0	27.5	0.0	8	0	44	0.0
13:10 - 13:15	8	0	44	0.0	5	0	27.5	0.0
13:15 - 13:20	9	0	49.5	0.0	6	0	33	0.0
13:20 - 13:25	10	0	55	0.0	8	0	44	0.0
13:25 - 13:30	8	0	44	0.0	6	0	33	0.0
13:30 - 13:35	9	0	49.5	0.0	9	0	49.5	0.0
13:35 - 13:40	10	0	55	0.0	8	0	44	0.0
13:40 - 13:45	6	0	33	0.0	9	0	49.5	0.0
13:45 - 13:50	8	0	44	0.0	7	0	38.5	0.0
13:50 - 13:55	9	0	49.5	0.0	6	0	33	0.0
13:55 - 14:00	7	0	38.5	0.0	9	0	49.5	0.0

ARM: FARNDON STREET

MAX QUEUE	LANE 1				LANE 2			
	LIGHTS	HEAVIES	QUEUE LENGTH (M)	%AGE HEAVIES	LIGHTS	HEAVIES	QUEUE LENGTH (M)	%AGE HEAVIES
8:00 - 8:05	2	0	11	0.0	2	0	11	0.0
8:05 - 8:10	3	0	16.5	0.0	3	0	16.5	0.0
8:10 - 8:15	2	1	26	33.3	4	0	22	0.0
8:15 - 8:20	2	0	11	0.0	5	0	27.5	0.0
8:20 - 8:25	2	0	11	0.0	6	0	33	0.0
8:25 - 8:30	1	0	5.5	0.0	4	0	22	0.0
8:30 - 8:35	2	0	11	0.0	2	0	11	0.0
8:35 - 8:40	3	0	16.5	0.0	3	0	16.5	0.0
8:40 - 8:45	4	0	22	0.0	5	0	27.5	0.0
8:45 - 8:50	2	0	11	0.0	6	0	33	0.0
8:50 - 8:55	2	0	11	0.0	5	0	27.5	0.0
8:55 - 9:00	3	0	16.5	0.0	4	0	22	0.0

16:00 - 16:05	1	0	5.5	0.0	4	0	22	0.0
16:05 - 16:10	0	0	0	0.0	2	0	11	0.0
16:10 - 16:15	2	0	11	0.0	3	0	16.5	0.0
16:15 - 16:20	3	0	16.5	0.0	2	0	11	0.0
16:20 - 16:25	1	0	5.5	0.0	3	0	16.5	0.0
16:25 - 16:30	2	0	11	0.0	4	0	22	0.0
16:30 - 16:35	2	0	11	0.0	5	0	27.5	0.0
16:35 - 16:40	1	0	5.5	0.0	2	0	11	0.0
16:40 - 16:45	0	1	15	0.0	3	0	16.5	0.0
16:45 - 16:50	2	0	11	0.0	5	0	27.5	0.0
16:50 - 16:55	1	0	5.5	0.0	2	0	11	0.0
16:55 - 17:00	0	0	0	0.0	3	0	16.5	0.0
17:00 - 17:05	2	0	11	0.0	4	0	22	0.0
17:05 - 17:10	3	0	16.5	0.0	2	0	11	0.0
17:10 - 17:15	1	0	5.5	0.0	3	0	16.5	0.0
17:15 - 17:20	2	0	11	0.0	2	0	11	0.0
17:20 - 17:25	0	0	0	0.0	3	0	16.5	0.0
17:25 - 17:30	2	0	11	0.0	5	0	27.5	0.0
17:30 - 17:35	1	0	5.5	0.0	3	0	16.5	0.0
17:35 - 17:40	1	0	5.5	0.0	1	0	5.5	0.0
17:40 - 17:45	3	0	16.5	0.0	3	0	16.5	0.0
17:45 - 17:50	1	0	5.5	0.0	4	0	22	0.0
17:45 - 17:50	2	0	11	0.0	2	0	11	0.0
17:50 - 17:55	1	0	5.5	0.0	3	0	16.5	0.0
17:50 - 17:55	0	0	0	0.0	1	0	5.5	0.0

13:00 - 13:05	4	0	22	0.0	2	0	11	0.0
13:05 - 13:10	1	0	5.5	0.0	4	0	22	0.0
13:10 - 13:15	0	0	0	0.0	5	0	27.5	0.0
13:15 - 13:20	2	0	11	0.0	6	0	33	0.0
13:20 - 13:25	3	0	16.5	0.0	4	0	22	0.0
13:25 - 13:30	2	0	11	0.0	2	0	11	0.0
13:30 - 13:35	2	0	11	0.0	3	0	16.5	0.0
13:35 - 13:40	1	0	5.5	0.0	5	0	27.5	0.0
13:40 - 13:45	2	0	11	0.0	3	0	16.5	0.0
13:45 - 13:50	1	0	5.5	0.0	4	0	22	0.0
13:50 - 13:55	2	0	11	0.0	6	0	33	0.0
13:55 - 14:00	1	0	5.5	0.0	3	0	16.5	0.0

ARM: HOLT ROAD TOWN

MAX QUEUE	LANE 1				LANE 2			
	LIGHTS	HEAVIES	QUEUE LENGTH (M)	%AGE HEAVIES	LIGHTS	HEAVIES	QUEUE LENGTH (M)	%AGE HEAVIES
8:00 - 8:05	0	0	0	0.0	0	0	0	0.0
8:05 - 8:10	1	0	5.5	0.0	1	0	5.5	0.0
8:10 - 8:15	0	0	0	0.0	0	0	0	0.0
8:15 - 8:20	0	0	0	0.0	0	0	0	0.0
8:20 - 8:25	0	0	0	0.0	1	0	5.5	0.0
8:25 - 8:30	0	0	0	0.0	0	0	0	0.0
8:30 - 8:35	1	0	5.5	0.0	1	0	5.5	0.0
8:35 - 8:40	0	0	0	0.0	0	0	0	0.0
8:40 - 8:45	0	0	0	0.0	0	0	0	0.0
8:45 - 8:50	1	0	5.5	0.0	1	0	5.5	0.0
8:50 - 8:55	0	0	0	0.0	0	0	0	0.0
8:55 - 9:00	0	0	0	0.0	0	0	0	0.0

16:00 - 16:05	1	0	5.5	0.0	1	0	5.5	0.0
16:05 - 16:10	0	0	0	0.0	0	0	0	0.0
16:10 - 16:15	0	0	0	0.0	0	0	0	0.0
16:15 - 16:20	1	0	5.5	0.0	0	0	0	0.0
16:20 - 16:25	0	0	0	0.0	1	0	5.5	0.0
16:25 - 16:30	1	0	5.5	0.0	1	0	5.5	0.0
16:30 - 16:35	1	0	5.5	0.0	0	0	0	0.0
16:35 - 16:40	0	0	0	0.0	0	0	0	0.0
16:40 - 16:45	1	0	5.5	0.0	1	0	5.5	0.0
16:45 - 16:50	0	0	0	0.0	0	0	0	0.0
16:50 - 16:55	0	0	0	0.0	0	0	0	0.0
16:55 - 17:00	1	0	5.5	0.0	1	0	5.5	0.0
17:00 - 17:05	1	0	5.5	0.0	0	0	0	0.0
17:05 - 17:10	2	0	11	0.0	1	0	5.5	0.0
17:10 - 17:15	0	0	0	0.0	0	0	0	0.0
17:15 - 17:20	3	0	16.5	0.0	0	0	0	0.0
17:20 - 17:25	0	0	0	0.0	1	0	5.5	0.0
17:25 - 17:30	0	0	0	0.0	0	0	0	0.0
17:30 - 17:35	1	0	5.5	0.0	0	0	0	0.0
17:35 - 17:40	0	0	0	0.0	0	0	0	0.0
17:40 - 17:45	0	0	0	0.0	1	0	5.5	0.0
17:45 - 17:50	1	0	5.5	0.0	0	0	0	0.0
17:45 - 17:50	0	0	0	0.0	0	0	0	0.0
17:50 - 17:55	0	0	0	0.0	1	0	5.5	0.0
17:50 - 17:55	1	0	5.5	0.0	0	0	0	0.0

13:00 - 13:05	0	0	0	0.0	2	0	11	0.0
13:05 - 13:10	1	0	5.5	0.0	0	0	0	0.0
13:10 - 13:15	0	0	0	0.0	1	0	5.5	0.0
13:15 - 13:20	2	0	11	0.0	2	0	11	0.0
13:20 - 13:25	0	0	0	0.0	0	0	0	0.0
13:25 - 13:30	2	0	11	0.0	1	0	5.5	0.0
13:30 - 13:35	3	0	16.5	0.0	2	0	11	0.0
13:35 - 13:40	0	0	0	0.0	0	0	0	0.0
13:40 - 13:45	2	0	11	0.0	2	0	11	0.0
13:45 - 13:50	0	0	0	0.0	3	0	16.5	0.0
13:50 - 13:55	1	0	5.5	0.0	1	0	5.5	0.0
13:55 - 14:00	0	0	0	0.0	1	0	5.5	0.0

ARM: BODHYFRYD

MAX QUEUE	LANE 1				LANE 2				LANE 3			
	LIGHTS	HEAVIES	QUEUE LENGTH (M)	%AGE HEAVIES	LIGHTS	HEAVIES	QUEUE LENGTH (M)	%AGE HEAVIES	LIGHTS	HEAVIES	QUEUE LENGTH (M)	%AGE HEAVIES
8:00 - 8:05	2	0	11	0.0	5	0	27.5	0.0	4	0	22	0.0
8:05 - 8:10	3	0	16.5	0.0	4	0	22	0.0	2	0	11	0.0
8:10 - 8:15	2	0	11	0.0	5	0	27.5	0.0	4	0	22	0.0
8:15 - 8:20	3	0	16.5	0.0	4	1	37	20.0	2	0	11	0.0
8:20 - 8:25	5	0	27.5	0.0	5	0	27.5	0.0	3	0	16.5	0.0
8:25 - 8:30	2	0	11	0.0	5	0	27.5	0.0	1	0	5.5	0.0
8:30 - 8:35	3	0	16.5	0.0	3	1	31.5	25.0	2	0	11	0.0
8:35 - 8:40	2	0	11	0.0	4	0	22	0.0	3	0	16.5	0.0
8:40 - 8:45	3	0	16.5	0.0	5	0	27.5	0.0	1	0	5.5	0.0
8:45 - 8:50	2	0	11	0.0	6	0	33	0.0	2	0	11	0.0
8:50 - 8:55	2	0	11	0.0	5	0	27.5	0.0	3	0	16.5	0.0
8:55 - 9:00	2	0	11	0.0	5	0	27.5	0.0	2	0	11	0.0

16:00 - 16:05	2	0	11	0.0	5	0	27.5	0.0	2	0	11	0.0
16:05 - 16:10	3	0	16.5	0.0	6	1	48	14.3	3	0	16.5	0.0
16:10 - 16:15	2	0	11	0.0	8	0	44	0.0	4	0	22	0.0
16:15 - 16:20	2	0	11	0.0	5	0	27.5	0.0	2	0	11	0.0
16:20 - 16:25	3	0	16.5	0.0	6	0	33	0.0	3	0	16.5	0.0
16:25 - 16:30	3	0	16.5	0.0	5	1	42.5	16.7	1	0	5.5	0.0
16:30 - 16:35	3	0	16.5	0.0	6	0	33	0.0	2	0	11	0.0
16:35 - 16:40	3	0	16.5	0.0	8	0	44	0.0	3	0	16.5	0.0
16:40 - 16:45	2	0	11	0.0	5	0	27.5	0.0	1	0	5.5	0.0
16:45 - 16:50	3	0	16.5	0.0	6	0	33	0.0	2	0	11	0.0
16:50 - 16:55	3	0	16.5	0.0	4	1	37	20.0	3	0	16.5	0.0
16:55 - 17:00	3	0	16.5	0.0	5	0	27.5	0.0	1	0	5.5	0.0
17:00 - 17:05	2	0	11	0.0	6	0	33	0.0	2	0	11	0.0
17:05 - 17:10	3	0	16.5	0.0	5	0	27.5	0.0	3	0	16.5	0.0
17:10 - 17:15	2	0	11	0.0	6	0	33	0.0	1	0	5.5	0.0
17:15 - 17:20	1	0	5.5	0.0	4	0	22	0.0	2	0	11	0.0
17:20 - 17:25	2	0	11	0.0	6	0	33	0.0	3	0	16.5	0.0
17:25 - 17:30	3	0	16.5	0.0	4	0	22	0.0	1	0	5.5	0.0
17:30 - 17:35	2	0	11	0.0	6	0	33	0.0	4	0	22	0.0
17:35 - 17:40	2	0	11	0.0	5	0	27.5	0.0	2	0	11	0.0
17:40 - 17:45	3	0	16.5	0.0	6	0	33	0.0	2	0	11	0.0
17:45 - 17:50	1	0	5.5	0.0	4	0	22	0.0	3	0	16.5	0.0
17:45 - 17:50	2	0	11	0.0	6	1	48	14.3	1	0	5.5	0.0
17:50 - 17:55	2	0	11	0.0	4	0	22	0.0	2	0	11	0.0
17:50 - 17:55	2	0	11	0.0	6	0	33	0.0	2	0	11	0.0

13:00 - 13:05	1	0	5.5	0.0	4	0	22	0.0	7	0	38.5	0.0
13:05 - 13:10	0	0	0	0.0	5	1	42.5	16.7	5	0	27.5	0.0
13:10 - 13:15	1	0	5.5	0.0	6	0	33	0.0	6	0	33	0.0
13:15 - 13:20	2	0	11	0.0	5	0	27.5	0.0	8	0	44	0.0
13:20 - 13:25	1	0	5.5	0.0	6	0	33	0.0	6	0	33	0.0
13:25 - 13:30	0	0	0	0.0	5	0	27.5	0.0	5	0	27.5	0.0
13:30 - 13:35	2	0	11	0.0	6	0	33	0.0	6	0	33	0.0
13:35 - 13:40	1	0	5.5	0.0	5	0	27.5	0.0	5	0	27.5	0.0
13:40 - 13:45	2	0	11	0.0	5	0	27.5	0.0	6	0	33	0.0
13:45 - 13:50	1	0	5.5	0.0	8	0	44	0.0	8	0	44	0.0
13:50 - 13:55	2	0	11	0.0	5	0	27.5	0.0	6	0	33	0.0
13:55 - 14:00	1	0	5.5	0.0	6	0	33	0.0	6	0	33	0.0

Queue Lengths, Wrexham

DATE: THURSDAY 29th NOVEMBER 2018

LOCATION: CHESTER ROAD / POWELL ROAD

ARM: CHESTER ROAD NORTH

MAX QUEUE	LANE 1				LANE 2			
	LIGHTS	HEAVIES	QUEUE LENGTH /M	%AGE HEAVIES	LIGHTS	HEAVIES	QUEUE LENGTH /M	%AGE HEAVIES
8:00 - 8:05	4	0	22	0.0	2	0	11	0.0
8:05 - 8:10	5	0	27.5	0.0	3	0	16.5	0.0
8:10 - 8:15	6	0	33	0.0	2	0	11	0.0
8:15 - 8:20	4	0	22	0.0	3	0	16.5	0.0
8:20 - 8:25	5	0	27.5	0.0	2	0	11	0.0
8:25 - 8:30	6	0	33	0.0	2	0	11	0.0
8:30 - 8:35	6	1	48	14.3	1	0	5.5	0.0
8:35 - 8:40	4	0	22	0.0	2	0	11	0.0
8:40 - 8:45	6	0	33	0.0	3	0	16.5	0.0
8:45 - 8:50	4	0	22	0.0	2	0	11	0.0
8:50 - 8:55	5	0	27.5	0.0	2	0	11	0.0
8:55 - 9:00	6	0	33	0.0	2	0	11	0.0

16:00 - 16:05	4	0	22	0.0	3	0	16.5	0.0
16:05 - 16:10	5	0	27.5	0.0	2	0	11	0.0
16:10 - 16:15	6	0	33	0.0	2	0	11	0.0
16:15 - 16:20	5	1	42.5	16.7	2	0	11	0.0
16:20 - 16:25	7	0	38.5	0.0	1	0	5.5	0.0
16:25 - 16:30	8	0	44	0.0	1	0	5.5	0.0
16:30 - 16:35	5	0	27.5	0.0	2	0	11	0.0
16:35 - 16:40	6	0	33	0.0	3	0	16.5	0.0
16:40 - 16:45	5	1	42.5	16.7	2	0	11	0.0
16:45 - 16:50	6	0	33	0.0	2	0	11	0.0
16:50 - 16:55	4	0	22	0.0	3	0	16.5	0.0
16:55 - 17:00	5	0	27.5	0.0	1	0	5.5	0.0
17:00 - 17:05	6	0	33	0.0	2	0	11	0.0
17:05 - 17:10	4	0	22	0.0	2	0	11	0.0
17:10 - 17:15	5	0	27.5	0.0	3	0	16.5	0.0
17:15 - 17:20	4	0	22	0.0	1	0	5.5	0.0
17:20 - 17:25	2	0	11	0.0	2	0	11	0.0
17:25 - 17:30	3	1	31.5	25.0	3	0	16.5	0.0
17:30 - 17:35	4	0	22	0.0	1	0	5.5	0.0
17:35 - 17:40	6	0	33	0.0	2	0	11	0.0
17:40 - 17:45	4	0	22	0.0	3	0	16.5	0.0
17:45 - 17:50	2	0	11	0.0	4	0	22	0.0
17:45 - 17:50	3	0	16.5	0.0	2	0	11	0.0
17:50 - 17:55	5	0	27.5	0.0	3	0	16.5	0.0
17:50 - 17:55	6	0	33	0.0	1	0	5.5	0.0

DATE: SATURDAY 24th NOVEMBER 2018

13:00 - 13:05	6	0	33	0.0	4	0	22	0.0
13:05 - 13:10	7	0	38.5	0.0	4	0	22	0.0
13:10 - 13:15	5	0	27.5	0.0	3	0	16.5	0.0
13:15 - 13:20	7	0	38.5	0.0	4	1	37	20.0
13:20 - 13:25	6	0	33	0.0	4	2	52	33.3
13:25 - 13:30	7	0	38.5	0.0	5	0	27.5	0.0
13:30 - 13:35	5	0	27.5	0.0	4	0	22	0.0
13:35 - 13:40	6	0	33	0.0	4	1	37	20.0
13:40 - 13:45	4	0	22	0.0	3	0	16.5	0.0
13:45 - 13:50	5	0	27.5	0.0	3	0	16.5	0.0
13:50 - 13:55	6	0	33	0.0	4	1	37	20.0
13:55 - 14:00	6	0	33	0.0	2	1	26	33.3

ARM: POWELL ROAD EAST

MAX QUEUE	LANE 1				LANE 2			
	LIGHTS	HEAVIES	QUEUE LENGTH /M	%AGE HEAVIES	LIGHTS	HEAVIES	QUEUE LENGTH /M	%AGE HEAVIES
8:00 - 8:05	3	0	16.5	0.0	4	0	22	0.0
8:05 - 8:10	4	0	22	0.0	5	0	27.5	0.0
8:10 - 8:15	4	0	22	0.0	2	0	11	0.0
8:15 - 8:20	2	0	11	0.0	3	0	16.5	0.0
8:20 - 8:25	7	0	38.5	0.0	6	0	33	0.0
8:25 - 8:30	2	0	11	0.0	5	0	27.5	0.0
8:30 - 8:35	5	0	27.5	0.0	8	0	44	0.0
8:35 - 8:40	6	0	33	0.0	6	0	33	0.0
8:40 - 8:45	4	0	22	0.0	4	0	22	0.0
8:45 - 8:50	5	0	27.5	0.0	5	0	27.5	0.0
8:50 - 8:55	6	0	33	0.0	6	0	33	0.0
8:55 - 9:00	4	0	22	0.0	6	0	33	0.0

16:00 - 16:05	6	0	33	0.0	4	0	22	0.0
16:05 - 16:10	4	0	22	0.0	5	0	27.5	0.0
16:10 - 16:15	5	0	27.5	0.0	6	0	33	0.0
16:15 - 16:20	6	0	33	0.0	6	0	33	0.0
16:20 - 16:25	12	0	66	0.0	5	0	27.5	0.0
16:25 - 16:30	8	0	44	0.0	6	0	33	0.0
16:30 - 16:35	7	0	38.5	0.0	7	0	38.5	0.0
16:35 - 16:40	10	0	55	0.0	5	0	27.5	0.0
16:40 - 16:45	11	0	60.5	0.0	6	0	33	0.0
16:45 - 16:50	8	0	44	0.0	8	0	44	0.0
16:50 - 16:55	9	0	49.5	0.0	5	0	27.5	0.0
16:55 - 17:00	7	0	38.5	0.0	6	0	33	0.0
17:00 - 17:05	9	0	49.5	0.0	4	0	22	0.0
17:05 - 17:10	8	0	44	0.0	5	0	27.5	0.0
17:10 - 17:15	9	0	49.5	0.0	6	0	33	0.0
17:15 - 17:20	6	0	33	0.0	4	0	22	0.0
17:20 - 17:25	7	0	38.5	0.0	5	0	27.5	0.0
17:25 - 17:30	5	0	27.5	0.0	6	0	33	0.0
17:30 - 17:35	4	0	22	0.0	8	0	44	0.0
17:35 - 17:40	5	0	27.5	0.0	6	0	33	0.0
17:40 - 17:45	6	0	33	0.0	4	0	22	0.0
17:45 - 17:50	4	0	22	0.0	6	0	33	0.0
17:45 - 17:50	6	0	33	0.0	4	0	22	0.0
17:50 - 17:55	6	0	33	0.0	6	0	33	0.0
17:50 - 17:55	1	0	5.5	0.0	6	0	33	0.0

13:00 - 13:05	10	0	55	0.0	4	0	22	0.0
13:05 - 13:10	7	0	38.5	0.0	6	0	33	0.0
13:10 - 13:15	4	0	22	0.0	2	0	11	0.0
13:15 - 13:20	5	0	27.5	0.0	3	0	16.5	0.0
13:20 - 13:25	4	0	22	0.0	4	0	22	0.0
13:25 - 13:30	7	0	38.5	0.0	6	0	33	0.0
13:30 - 13:35	5	0	27.5	0.0	3	0	16.5	0.0
13:35 - 13:40	5	0	27.5	0.0	2	0	11	0.0
13:40 - 13:45	8	1	59	11.1	5	0	27.5	0.0
13:45 - 13:50	6	0	33	0.0	3	0	16.5	0.0
13:50 - 13:55	7	0	38.5	0.0	6	0	33	0.0
13:55 - 14:00	6	0	33	0.0	4	0	22	0.0

ARM: CHESTER ROAD SOUTH

MAX QUEUE	LANE 1				LANE 2			
	LIGHTS	HEAVIES	QUEUE LENGTH /ft	%AGE HEAVIES	LIGHTS	HEAVIES	QUEUE LENGTH /ft	%AGE HEAVIES
8:00 - 8:05	3	0	16.5	0.0	2	0	11	0.0
8:05 - 8:10	5	0	27.5	0.0	3	0	16.5	0.0
8:10 - 8:15	2	0	11	0.0	4	0	22	0.0
8:15 - 8:20	2	0	11	0.0	3	0	16.5	0.0
8:20 - 8:25	3	0	16.5	0.0	4	0	22	0.0
8:25 - 8:30	1	0	5.5	0.0	5	0	27.5	0.0
8:30 - 8:35	2	0	11	0.0	6	0	33	0.0
8:35 - 8:40	3	0	16.5	0.0	4	0	22	0.0
8:40 - 8:45	4	0	22	0.0	5	0	27.5	0.0
8:45 - 8:50	6	0	33	0.0	6	0	33	0.0
8:50 - 8:55	8	0	44	0.0	6	0	33	0.0
8:55 - 9:00	6	0	33	0.0	6	0	33	0.0

16:00 - 16:05	8	0	44	0.0	4	0	22	0.0
16:05 - 16:10	7	0	38.5	0.0	5	0	27.5	0.0
16:10 - 16:15	6	0	33	0.0	5	0	27.5	0.0
16:15 - 16:20	8	0	44	0.0	4	0	22	0.0
16:20 - 16:25	6	1	48	14.3	3	0	16.5	0.0
16:25 - 16:30	7	0	38.5	0.0	5	0	27.5	0.0
16:30 - 16:35	5	0	27.5	0.0	4	0	22	0.0
16:35 - 16:40	6	1	48	14.3	5	0	27.5	0.0
16:40 - 16:45	8	0	44	0.0	5	0	27.5	0.0
16:45 - 16:50	8	0	44	0.0	3	0	16.5	0.0
16:50 - 16:55	5	0	27.5	0.0	5	0	27.5	0.0
16:55 - 17:00	6	1	48	14.3	4	0	22	0.0
17:00 - 17:05	7	0	38.5	0.0	5	0	27.5	0.0
17:05 - 17:10	5	0	27.5	0.0	6	0	33	0.0
17:10 - 17:15	6	0	33	0.0	4	0	22	0.0
17:15 - 17:20	4	1	37	20.0	5	0	27.5	0.0
17:20 - 17:25	6	0	33	0.0	5	0	27.5	0.0
17:25 - 17:30	9	0	49.5	0.0	2	0	11	0.0
17:30 - 17:35	7	1	53.5	12.5	3	0	16.5	0.0
17:35 - 17:40	5	0	27.5	0.0	4	0	22	0.0
17:40 - 17:45	6	0	33	0.0	2	0	11	0.0
17:45 - 17:50	4	0	22	0.0	3	0	16.5	0.0
17:45 - 17:50	5	0	27.5	0.0	1	0	5.5	0.0
17:50 - 17:55	6	0	33	0.0	2	0	11	0.0
17:50 - 17:55	4	0	22	0.0	3	0	16.5	0.0

13:00 - 13:05	7	0	38.5	0.0	3	0	16.5	0.0
13:05 - 13:10	6	0	33	0.0	2	0	11	0.0
13:10 - 13:15	8	0	44	0.0	3	0	16.5	0.0
13:15 - 13:20	7	1	53.5	12.5	2	0	11	0.0
13:20 - 13:25	8	1	59	11.1	3	0	16.5	0.0
13:25 - 13:30	6	1	48	14.3	2	0	11	0.0
13:30 - 13:35	4	0	22	0.0	2	0	11	0.0
13:35 - 13:40	5	0	27.5	0.0	2	0	11	0.0
13:40 - 13:45	5	1	42.5	16.7	3	0	16.5	0.0
13:45 - 13:50	4	0	22	0.0	1	0	5.5	0.0
13:50 - 13:55	5	1	42.5	16.7	2	0	11	0.0
13:55 - 14:00	5	0	27.5	0.0	1	0	5.5	0.0

ARM: POWELL ROAD WEST

MAX QUEUE	LANE 1				LANE 2			
	LIGHTS	HEAVIES	QUEUE LENGTH /ft	%AGE HEAVIES	LIGHTS	HEAVIES	QUEUE LENGTH /ft	%AGE HEAVIES
8:00 - 8:05	5	0	27.5	0.0	2	1	26	33.3
8:05 - 8:10	4	1	37	20.0	3	0	16.5	0.0
8:10 - 8:15	5	0	27.5	0.0	3	0	16.5	0.0
8:15 - 8:20	6	0	33	0.0	4	0	22	0.0
8:20 - 8:25	4	1	37	20.0	2	0	11	0.0
8:25 - 8:30	5	0	27.5	0.0	3	0	16.5	0.0
8:30 - 8:35	6	0	33	0.0	5	0	27.5	0.0
8:35 - 8:40	4	0	22	0.0	3	0	16.5	0.0
8:40 - 8:45	4	0	22	0.0	4	0	22	0.0
8:45 - 8:50	5	0	27.5	0.0	2	0	11	0.0
8:50 - 8:55	6	0	33	0.0	3	0	16.5	0.0
8:55 - 9:00	6	0	33	0.0	5	0	27.5	0.0

16:00 - 16:05	12	0	66	0.0	4	0	22	0.0
16:05 - 16:10	5	0	27.5	0.0	2	0	11	0.0
16:10 - 16:15	6	0	33	0.0	3	0	16.5	0.0
16:15 - 16:20	9	0	49.5	0.0	3	0	16.5	0.0
16:20 - 16:25	7	0	38.5	0.0	2	0	11	0.0
16:25 - 16:30	6	0	33	0.0	2	0	11	0.0
16:30 - 16:35	7	0	38.5	0.0	3	0	16.5	0.0
16:35 - 16:40	5	0	27.5	0.0	1	0	5.5	0.0
16:40 - 16:45	6	1	48	14.3	4	0	22	0.0
16:45 - 16:50	8	0	44	0.0	2	0	11	0.0
16:50 - 16:55	5	0	27.5	0.0	3	0	16.5	0.0
16:55 - 17:00	6	0	33	0.0	4	0	22	0.0
17:00 - 17:05	5	0	27.5	0.0	2	0	11	0.0
17:05 - 17:10	6	0	33	0.0	3	0	16.5	0.0
17:10 - 17:15	8	0	44	0.0	1	0	5.5	0.0
17:15 - 17:20	6	0	33	0.0	2	0	11	0.0
17:20 - 17:25	4	0	22	0.0	3	0	16.5	0.0
17:25 - 17:30	5	0	27.5	0.0	4	0	22	0.0
17:30 - 17:35	6	0	33	0.0	2	0	11	0.0
17:35 - 17:40	4	0	22	0.0	3	0	16.5	0.0
17:40 - 17:45	6	0	33	0.0	4	0	22	0.0
17:45 - 17:50	4	0	22	0.0	2	0	11	0.0
17:45 - 17:50	4	0	22	0.0	3	0	16.5	0.0
17:50 - 17:55	5	1	42.5	16.7	1	0	5.5	0.0
17:50 - 17:55	6	0	33	0.0	2	0	11	0.0

13:00 - 13:05	8	0	44	0.0	6	0	33	0.0
13:05 - 13:10	12	0	66	0.0	3	0	16.5	0.0
13:10 - 13:15	8	0	44	0.0	4	0	22	0.0
13:15 - 13:20	6	1	48	14.3	3	0	16.5	0.0
13:20 - 13:25	7	0	38.5	0.0	5	1	42.5	16.7
13:25 - 13:30	6	0	33	0.0	5	0	27.5	0.0
13:30 - 13:35	6	0	33	0.0	2	0	11	0.0
13:35 - 13:40	9	0	49.5	0.0	3	0	16.5	0.0
13:40 - 13:45	7	0	38.5	0.0	4	0	22	0.0
13:45 - 13:50	7	0	38.5	0.0	4	0	22	0.0
13:50 - 13:55	11	0	60.5	0.0	3	0	16.5	0.0
13:55 - 14:00	6	0	33	0.0	3	0	16.5	0.0