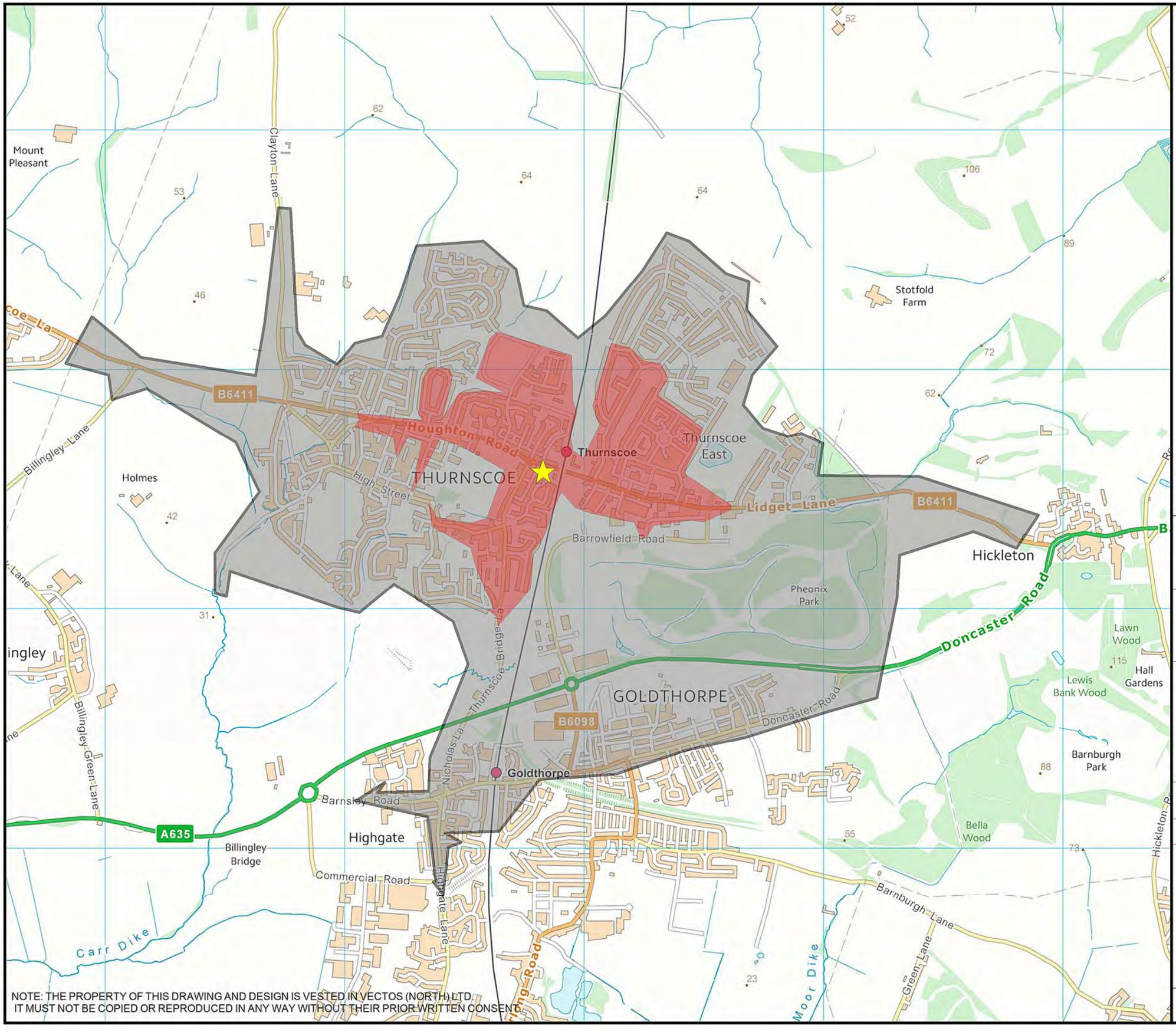


Legend

- Site Location
- 800m Catchment
- 2km Catchment

PLAN TP4

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CLIENT:

Netto

PROJECT TITLE:

Proposed Store, Thurnscoe

DRAWING TITLE:

800m and 2km Pedestrian Catchment

SCALE: 1:20,000 at A3

DRAWN:	CHECKED:	DATE:
PJ	HS	Jul 15

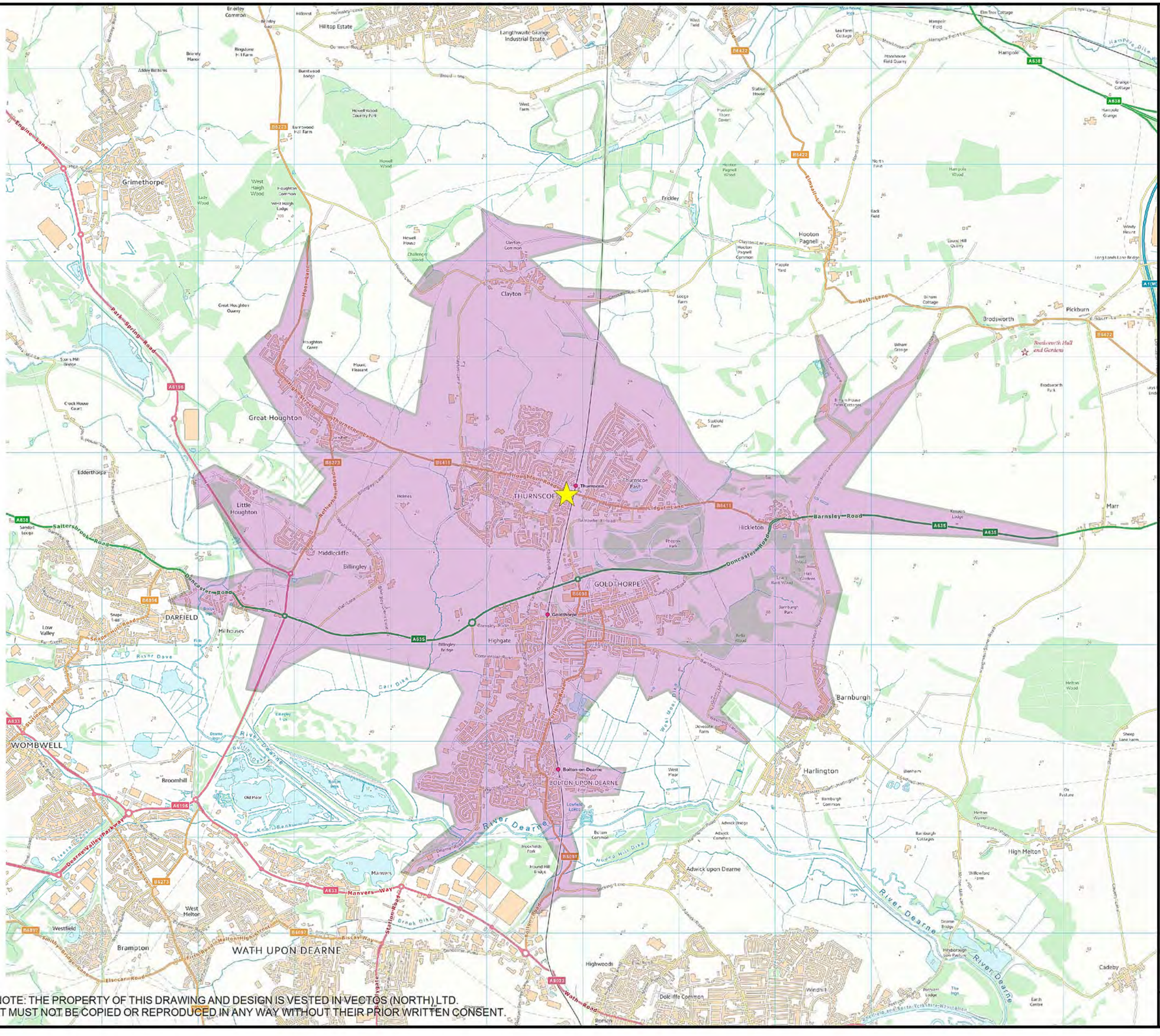
vectos transport planning specialists

Oxford Place, 61 Oxford Street, Manchester M1 6EQ
t:0161 22801008 e:manchester@vectos.co.uk

DRAWING NO: VN50443-G104

REVISION:

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PLAN TP5

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CLIENT:

Netto

PROJECT TITLE:

Proposed Store, Thurnscoe

DRAWING TITLE:

5km Cycle Catchment

SCALE:

1:50,000 at A3

DRAWN:	CHECKED:	DATE:
PJ	HS	Jul 15

vectos
transport planning specialists

Oxford Place, 61 Oxford Street, Manchester M1 6EQ
t:0161 22801008 e:manchester@vectos.co.uk

DRAWING NO: VN50443-G103

REVISION:

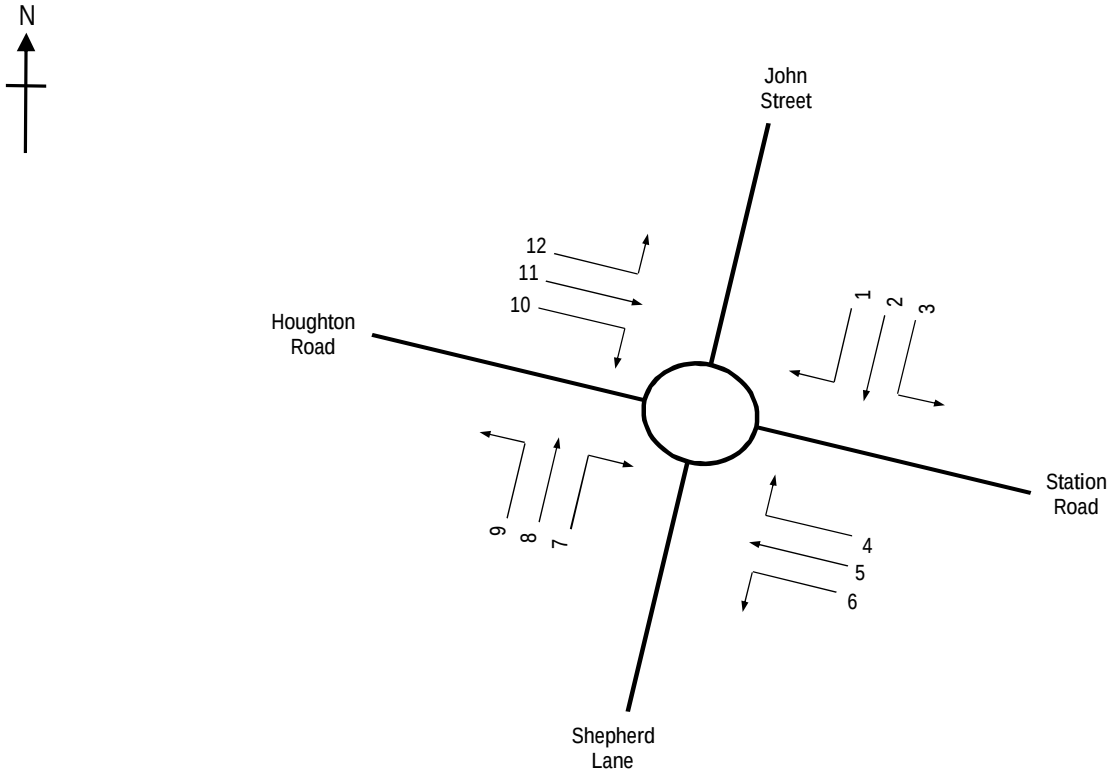
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APPENDIX D
TRAFFIC SURVEY DATA

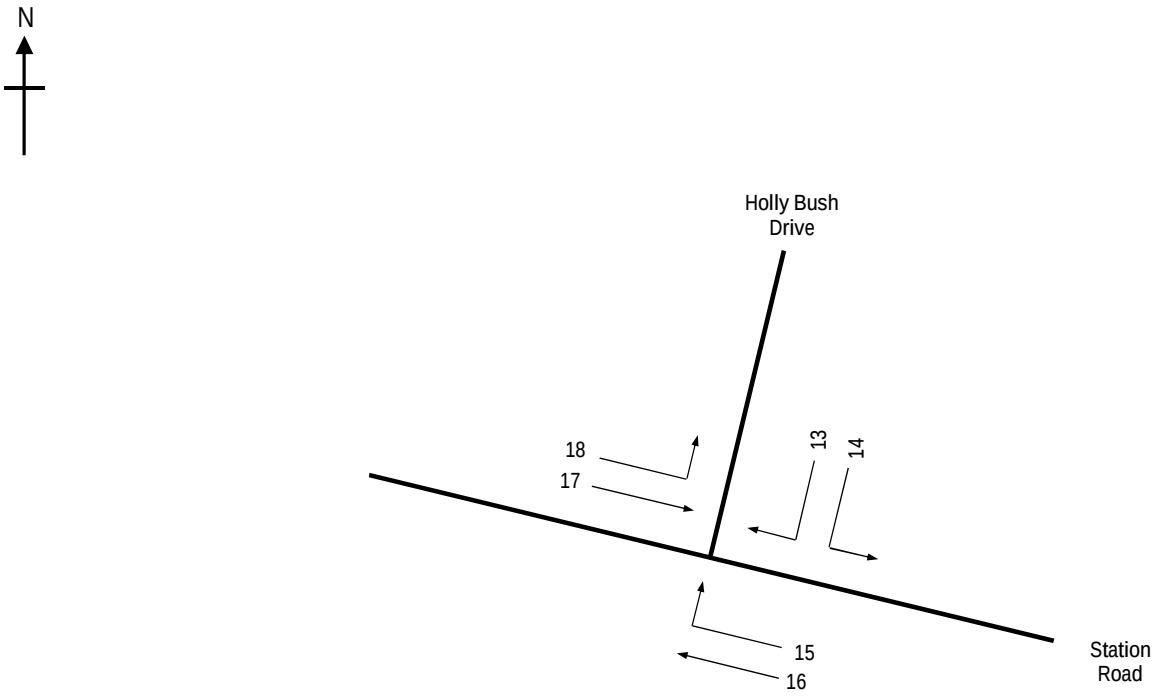
SURVEY CONTROL

Client:	Vectos
Client Contact:	Richard Whiting
Survey Location:	Thurnscoe
Date(s) of Survey:	Saturday 11 July 2015 Wednesday 15 July 2015
Notes:	
On Site Supervisor:	Gary Dixon
Data Checking:	Richard Adams
Survey Reference:	2015.110 Thurnscoe
Status:	Final
Date of Issue:	17 July 2015

JUNCTION 1



JUNCTION 2



DRAWING TITLE: TRAFFIC MOVEMENT REFERENCE			
JOB TITLE: 2015.110 THURNSCOE			
DRAWN BY: DC	DATE: JUL 2015	SCALE: NTS	REF: FIGURE 1

signal surveys
Traffic Counts and Car Park Surveys
Parkway House, Palatine Road, Northenden, Manchester, M22 4DB
Tel 0161 998 4226 Fax 0161 998 1189

Time Beginning	John Street/Houghton Road/Shepherd Lane/Station Road - Saturday 11 July 2015																							
	1		2		3		4		5		6		7		8		9		10		11		12	
	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
1100	1	0	2	0	1	0	0	0	53	1	32	3	26	0	1	0	46	0	49	0	46	6	2	0
1115	1	0	2	0	0	0	0	0	58	3	26	2	22	0	1	0	42	2	47	0	53	0	5	1
1130	0	0	2	1	3	0	0	0	52	2	30	1	29	1	2	0	35	0	55	0	48	4	0	0
1145	1	0	3	0	1	0	0	0	59	2	23	2	29	1	2	0	32	2	35	0	53	1	1	0
1200	0	0	3	0	0	0	0	0	40	1	30	2	28	0	3	0	38	0	44	0	53	1	0	0
1215	0	0	2	0	0	0	0	0	62	0	21	0	9	0	2	0	46	1	43	0	52	0	4	0
1230	0	0	5	0	1	0	1	0	53	0	20	1	21	1	3	0	46	1	24	1	59	2	1	0
1245	3	0	3	0	1	0	1	0	53	2	21	0	32	0	1	0	40	2	35	0	58	0	3	0
1300	1	0	0	0	0	0	0	0	59	1	21	2	22	0	0	0	75	1	40	0	56	3	1	0
1315	0	0	5	0	3	0	0	0	45	1	27	0	21	0	1	0	47	1	42	0	47	0	2	1
1330	3	0	3	0	0	0	1	0	51	2	16	1	22	0	2	0	38	0	30	0	43	3	5	0
1345	1	0	4	0	1	0	2	0	53	0	22	0	22	1	1	0	30	1	33	0	44	3	0	0

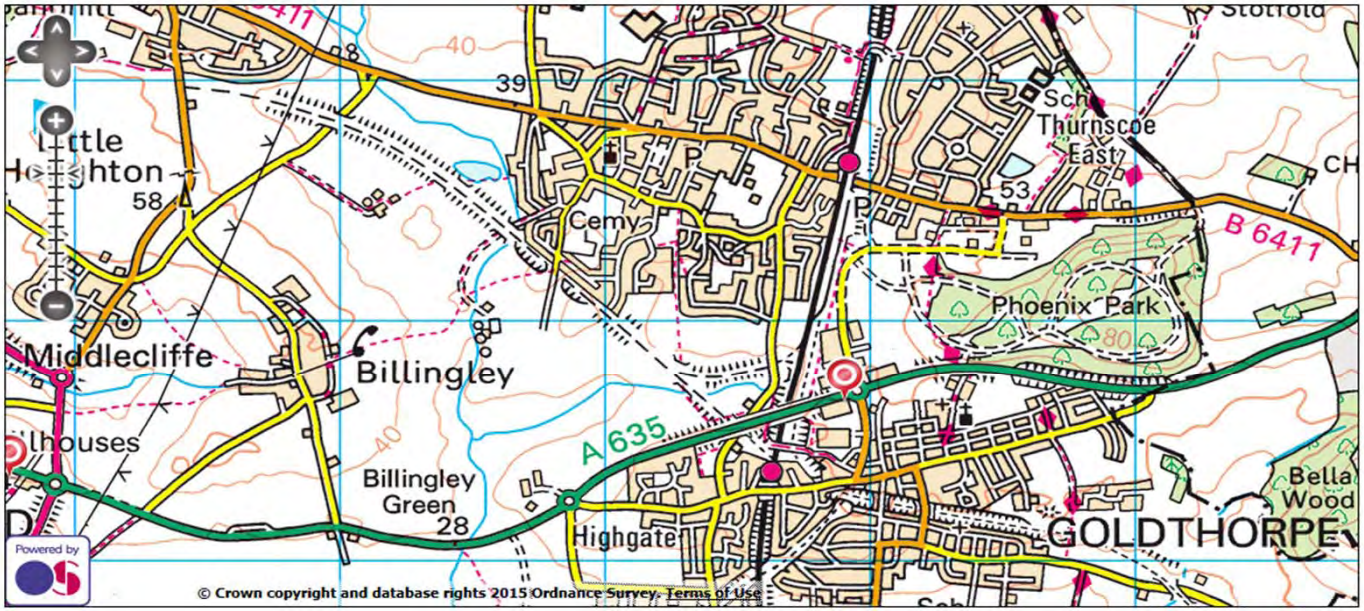
Time Beginning	John Street/Houghton Road/Shepherd Lane/Station Road - Wednesday 15 July 2015																							
	1		2		3		4		5		6		7		8		9		10		11		12	
	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
1600	1	0	2	1	1	0	2	0	65	1	36	1	21	2	5	0	37	1	32	0	73	2	3	1
1615	3	0	2	0	3	0	1	0	61	1	28	0	28	2	2	0	49	2	51	0	47	1	2	0
1630	2	0	2	0	0	0	1	0	75	3	34	1	31	0	1	0	46	0	36	1	73	3	3	0
1645	1	0	4	0	1	0	1	0	66	0	31	0	21	3	4	0	63	0	38	1	53	1	2	0
1700	2	0	2	0	2	0	1	0	88	3	40	1	17	0	5	0	59	0	39	1	48	0	4	0
1715	0	0	2	0	2	0	2	0	71	0	35	0	27	1	1	0	55	0	40	0	70	2	1	0
1730	1	0	1	0	4	0	4	0	76	2	28	0	18	0	2	0	43	1	44	0	48	1	5	0
1745	2	0	2	0	2	0	2	0	58	1	26	2	23	0	2	0	57	0	42	1	54	1	2	0
1800	1	0	2	0	1	0	3	0	52	0	25	1	22	0	5	0	60	1	36	0	49	3	2	0
1815	2	0	0	0	2	0	1	0	64	2	19	1	9	0	2	0	42	2	40	1	56	0	0	0
1830	6	0	2	0	1	0	3	0	52	1	21	1	23	0	3	0	39	0	34	0	49	3	2	0
1845	1	0	4	0	1	0	0	0	61	0	26	0	15	0	1	0	31	0	29	0	38	0	5	0

Time Beginning	Station Road/ Holly Bush Frive - Saturday 11 July 2015											
	13		14		15		16		17		18	
	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
1100	3	0	0	0	1	0	82	4	72	6	1	0
1115	0	0	0	0	0	0	84	5	75	0	0	0
1130	1	0	0	0	0	0	81	3	79	5	1	0
1145	1	0	2	0	0	0	81	4	81	2	2	0
1200	1	0	0	0	0	0	69	3	80	1	1	0
1215	0	0	0	0	0	0	83	0	61	0	0	0
1230	2	0	1	0	2	0	72	1	80	3	1	0
1245	0	0	0	0	0	0	75	2	89	0	2	0
1300	2	0	0	0	0	0	78	3	78	3	0	0
1315	3	0	1	0	1	0	69	1	68	0	3	0
1330	0	0	2	0	0	0	68	3	65	3	0	0
1345	1	0	0	0	1	0	76	0	66	4	1	0

Time Beginning	Station Road/ Holly Bush Drive - Wednesday 15 July 2015											
	13		14		15		16		17		18	
	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
1600	13	0	5	0	2	0	90	2	85	4	10	0
1615	5	0	1	0	3	0	85	1	77	3	1	0
1630	8	0	4	0	3	0	102	4	93	3	11	0
1645	7	0	5	0	4	0	91	0	67	4	8	0
1700	8	0	7	0	5	0	121	4	63	0	4	0
1715	6	0	2	0	0	0	102	0	91	3	8	0
1730	3	0	4	0	2	0	105	2	68	1	2	0
1745	5	0	1	0	3	0	81	3	75	1	4	0
1800	5	0	0	0	0	0	75	1	71	3	1	0
1815	3	0	1	0	0	0	81	3	65	0	2	0
1830	6	0	1	0	1	0	70	2	72	3	1	0
1845	0	0	1	0	1	0	87	0	54	0	0	0

APPENDIX D
TRAFFIC SURVEY DATA

Individual count point data and downloads ↓



Count point marker | 5 Cluster of markers

Barnsley 2014 count points

100%

AADFYear	CP	Region	LocalAuthc	Road	RoadCateg	Easting	Northing	StartJunctic	EndJunctio	LinkLength	LinkLength	PedalCycle	Motorcycle	Cars	Taxis	BusesCoacl	LightGoods	V2AxleRigi	V3AxleRigi	V4or5Axlel	V3or4Axle/	V5AxleArti	V6orMore/	AllHGVs	AllMotorVe
2007	57483	Yorkshire a	Barnsley	A635	PR	445900	404670	A6195	LA Bounda	4.6	2.85	6	227	10175	23	2381	477	97	195	84	305	323	1481	14287	
2008	57483	Yorkshire a	Barnsley	A635	PR	445900	404670	A6195	LA Bounda	4.6	2.85	6	220	10103	23	2386	466	106	202	79	288	340	1481	14213	
2009	57483	Yorkshire a	Barnsley	A635	PR	445900	404670	A6195	LA Bounda	4.6	2.85	7	230	9971	24	2465	432	106	194	73	248	329	1382	14072	
2010	57483	Yorkshire a	Barnsley	A635	PR	445900	404670	A6195	LA Bounda	4.6	2.85	16	82	9901	35	2198	320	78	134	72	280	237	1121	13337	
2011	57483	Yorkshire a	Barnsley	A635	PR	445900	404670	A6195	LA Bounda	4.6	2.85	35	82	9178	17	2211	323	66	143	47	304	233	1116	12604	
2012	57483	Yorkshire a	Barnsley	A635	PR	445900	404670	A6195	LA Bounda	4.6	2.85	33	76	8921	17	2320	327	72	163	34	284	233	1113	12445	
2013	57483	Yorkshire a	Barnsley	A635	PR	445900	404670	A6195	LA Bounda	4.6	2.9	32	76	8756	15	2490	325	77	183	26	270	237	1118	12455	
2014	57483	Yorkshire a	Barnsley	A635	PR	445900	404670	A6195	LA Bounda	4.6	2.86	26	79	8878	16	2677	323	83	194	26	256	260	1143	12792	

APPENDIX F
TRICS OUTPUT FILES

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 01 - RETAIL
Category : C - DISCOUNT FOOD STORES
MULTI-MODAL VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	KC	KENT	1 days
05	EAST MIDLANDS		
	NR	NORTHAMPTONSHIRE	1 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NY	NORTH YORKSHIRE	1 days
08	NORTH WEST		
	MS	MERSEYSIDE	2 days
10	WALES		
	GW	GWYNEDD	1 days
	PS	POWYS	1 days
11	SCOTLAND		
	HI	HIGHLAND	1 days
	PK	PERTH & KINROSS	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Filtering Stage 2 selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Gross floor area
Actual Range: 1150 to 1900 (units: sqm)
Range Selected by User: 900 to 1900 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/06 to 27/11/12

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	2 days
Tuesday	4 days
Wednesday	3 days
Friday	1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	10 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Edge of Town Centre	6
Suburban Area (PPS6 Out of Centre)	2
Edge of Town	1
Neighbourhood Centre (PPS6 Local Centre)	1

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Industrial Zone	1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Filtering Stage 3 selection:

Use Class:

Not Known	1 days
A1	9 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 1 mile:

5,001 to 10,000	3 days
10,001 to 15,000	2 days
15,001 to 20,000	2 days
25,001 to 50,000	3 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	3 days
25,001 to 50,000	2 days
50,001 to 75,000	1 days
100,001 to 125,000	1 days
125,001 to 250,000	1 days
500,001 or More	2 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	2 days
1.1 to 1.5	8 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Petrol filling station:

Included in the survey count	0 days
Excluded from count or no filling station	10 days

This data displays the number of surveys within the selected set that include petrol filling station activity, and the number of surveys that do not.

Travel Plan:

Yes	1 days
No	9 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

LIST OF SITES relevant to selection parameters

1 GW-01-C-01 LIDL GWYNEDD
HIGH STREET

BANGOR
Edge of Town Centre
No Sub Category
Total Gross floor area: 1310 sqm
Survey date: FRIDAY 10/07/09 Survey Type: MANUAL

2 HI-01-C-01 LIDL HIGHLAND
CAMANACHD CRESCENT

FORT WILLIAM
Edge of Town Centre
Retail Zone
Total Gross floor area: 1285 sqm
Survey date: TUESDAY 19/05/09 Survey Type: MANUAL

3 KC-01-C-02 ALDI KENT
WELL ROAD

MAIDSTONE
Edge of Town Centre
Built-Up Zone
Total Gross floor area: 1407 sqm
Survey date: TUESDAY 27/11/12 Survey Type: MANUAL

4 MS-01-C-02 ALDI MERSEYSIDE
SMITHDOWN ROAD
WAVERTREE
LIVERPOOL
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 1200 sqm
Survey date: MONDAY 18/06/07 Survey Type: MANUAL

5 MS-01-C-03 ALDI MERSEYSIDE
LAUREL ROAD
ELM PARK
LIVERPOOL
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 1165 sqm
Survey date: WEDNESDAY 20/06/07 Survey Type: MANUAL

6 NR-01-C-01 ALDI NORTHAMPTONSHIRE
DALTON ROAD

CORBY
Edge of Town
Industrial Zone
Total Gross floor area: 1345 sqm
Survey date: WEDNESDAY 19/11/08 Survey Type: MANUAL

7 NY-01-C-02 LIDL NORTH YORKSHIRE
STATION ROAD

THIRSK
Edge of Town Centre
No Sub Category
Total Gross floor area: 1527 sqm
Survey date: TUESDAY 11/10/11 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8	PK-01-C-01	ALDI		PERTH & KINROSS
	GLASGOW ROAD			
	PERTH			
	Edge of Town Centre			
	Retail Zone			
	Total Gross floor area:		1400 sqm	
	Survey date: WEDNESDAY		11/05/11	Survey Type: MANUAL
9	PS-01-C-01	ALDI		POWYS
	RICH WAY			
	BRECON			
	Edge of Town Centre			
	No Sub Category			
	Total Gross floor area:		1150 sqm	
	Survey date: MONDAY		15/09/08	Survey Type: MANUAL
10	SH-01-C-01	LIDL		SHROPSHIRE
	CASTLE STREET			
	HADLEY			
	TELFORD			
	Suburban Area (PPS6 Out of Centre)			
	No Sub Category			
	Total Gross floor area:		1900 sqm	
	Survey date: TUESDAY		16/06/09	Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 01 - RETAIL/C - DISCOUNT FOOD STORES
MULTI-MODAL VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	6	1417	0.282	6	1417	0.094	6	1417	0.376
08:00 - 09:00	10	1369	0.928	10	1369	0.526	10	1369	1.454
09:00 - 10:00	10	1369	2.265	10	1369	1.666	10	1369	3.931
10:00 - 11:00	10	1369	3.521	10	1369	3.032	10	1369	6.553
11:00 - 12:00	10	1369	3.331	10	1369	3.214	10	1369	6.545
12:00 - 13:00	10	1369	3.280	10	1369	3.404	10	1369	6.684
13:00 - 14:00	10	1369	3.207	10	1369	3.192	10	1369	6.399
14:00 - 15:00	10	1369	3.959	10	1369	3.726	10	1369	7.685
15:00 - 16:00	10	1369	3.631	10	1369	3.843	10	1369	7.474
16:00 - 17:00	10	1369	3.170	10	1369	3.346	10	1369	6.516
17:00 - 18:00	10	1369	2.907	10	1369	3.499	10	1369	6.406
18:00 - 19:00	10	1369	2.148	10	1369	2.528	10	1369	4.676
19:00 - 20:00	10	1369	0.906	10	1369	1.308	10	1369	2.214
20:00 - 21:00	4	1411	0.266	4	1411	0.390	4	1411	0.656
21:00 - 22:00	2	1404	0.143	2	1404	0.392	2	1404	0.535
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			33.944			34.160			68.104

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.

Parameter summary

Trip rate parameter range selected:	1150 - 1900 (units: sqm)
Survey date date range:	01/01/06 - 27/11/12
Number of weekdays (Monday-Friday):	10
Number of Saturdays:	1
Number of Sundays:	0
Surveys manually removed from selection:	1

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 01 - RETAIL/C - DISCOUNT FOOD STORES
MULTI-MODAL CYCLISTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	6	1417	0.000	6	1417	0.000	6	1417	0.000
08:00 - 09:00	10	1369	0.015	10	1369	0.022	10	1369	0.037
09:00 - 10:00	10	1369	0.051	10	1369	0.058	10	1369	0.109
10:00 - 11:00	10	1369	0.029	10	1369	0.029	10	1369	0.058
11:00 - 12:00	10	1369	0.051	10	1369	0.022	10	1369	0.073
12:00 - 13:00	10	1369	0.037	10	1369	0.037	10	1369	0.074
13:00 - 14:00	10	1369	0.051	10	1369	0.051	10	1369	0.102
14:00 - 15:00	10	1369	0.073	10	1369	0.073	10	1369	0.146
15:00 - 16:00	10	1369	0.051	10	1369	0.037	10	1369	0.088
16:00 - 17:00	10	1369	0.073	10	1369	0.080	10	1369	0.153
17:00 - 18:00	10	1369	0.095	10	1369	0.110	10	1369	0.205
18:00 - 19:00	10	1369	0.015	10	1369	0.007	10	1369	0.022
19:00 - 20:00	10	1369	0.015	10	1369	0.022	10	1369	0.037
20:00 - 21:00	4	1411	0.000	4	1411	0.018	4	1411	0.018
21:00 - 22:00	2	1404	0.000	2	1404	0.000	2	1404	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.556			0.566			1.122

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.

Parameter summary

Trip rate parameter range selected:	1150 - 1900 (units: sqm)
Survey date date range:	01/01/06 - 27/11/12
Number of weekdays (Monday-Friday):	10
Number of Saturdays:	1
Number of Sundays:	0
Surveys manually removed from selection:	1

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 01 - RETAIL/C - DISCOUNT FOOD STORES
MULTI-MODAL PEDESTRIANS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	6	1417	0.153	6	1417	0.035	6	1417	0.188
08:00 - 09:00	10	1369	0.329	10	1369	0.205	10	1369	0.534
09:00 - 10:00	10	1369	0.877	10	1369	0.774	10	1369	1.651
10:00 - 11:00	10	1369	1.563	10	1369	1.293	10	1369	2.856
11:00 - 12:00	10	1369	1.454	10	1369	1.300	10	1369	2.754
12:00 - 13:00	10	1369	1.512	10	1369	1.600	10	1369	3.112
13:00 - 14:00	10	1369	1.227	10	1369	1.198	10	1369	2.425
14:00 - 15:00	10	1369	1.154	10	1369	1.315	10	1369	2.469
15:00 - 16:00	10	1369	1.490	10	1369	1.410	10	1369	2.900
16:00 - 17:00	10	1369	1.498	10	1369	1.388	10	1369	2.886
17:00 - 18:00	10	1369	1.220	10	1369	1.381	10	1369	2.601
18:00 - 19:00	10	1369	0.964	10	1369	1.256	10	1369	2.220
19:00 - 20:00	10	1369	0.453	10	1369	0.475	10	1369	0.928
20:00 - 21:00	4	1411	0.018	4	1411	0.106	4	1411	0.124
21:00 - 22:00	2	1404	0.000	2	1404	0.000	2	1404	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			13.912			13.736			27.648

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.

Parameter summary

Trip rate parameter range selected:	1150 - 1900 (units: sqm)
Survey date date range:	01/01/06 - 27/11/12
Number of weekdays (Monday-Friday):	10
Number of Saturdays:	1
Number of Sundays:	0
Surveys manually removed from selection:	1

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 01 - RETAIL/C - DISCOUNT FOOD STORES
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	6	1417	0.035	6	1417	0.000	6	1417	0.035
08:00 - 09:00	10	1369	0.124	10	1369	0.088	10	1369	0.212
09:00 - 10:00	10	1369	0.153	10	1369	0.117	10	1369	0.270
10:00 - 11:00	10	1369	0.336	10	1369	0.321	10	1369	0.657
11:00 - 12:00	10	1369	0.190	10	1369	0.205	10	1369	0.395
12:00 - 13:00	10	1369	0.278	10	1369	0.292	10	1369	0.570
13:00 - 14:00	10	1369	0.190	10	1369	0.183	10	1369	0.373
14:00 - 15:00	10	1369	0.124	10	1369	0.205	10	1369	0.329
15:00 - 16:00	10	1369	0.314	10	1369	0.197	10	1369	0.511
16:00 - 17:00	10	1369	0.153	10	1369	0.263	10	1369	0.416
17:00 - 18:00	10	1369	0.110	10	1369	0.139	10	1369	0.249
18:00 - 19:00	10	1369	0.051	10	1369	0.073	10	1369	0.124
19:00 - 20:00	10	1369	0.007	10	1369	0.022	10	1369	0.029
20:00 - 21:00	4	1411	0.000	4	1411	0.000	4	1411	0.000
21:00 - 22:00	2	1404	0.000	2	1404	0.000	2	1404	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.065			2.105			4.170

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.

Parameter summary

Trip rate parameter range selected:	1150 - 1900 (units: sqm)
Survey date date range:	01/01/06 - 27/11/12
Number of weekdays (Monday-Friday):	10
Number of Saturdays:	1
Number of Sundays:	0
Surveys manually removed from selection:	1

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 01 - RETAIL
Category : C - DISCOUNT FOOD STORES
MULTI-MODAL VEHICLES

Selected regions and areas:
06 WEST MIDLANDS
HE HEREFORDSHIRE 1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Filtering Stage 2 selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Gross floor area
Actual Range: 1150 to 1900 (units: sqm)
Range Selected by User: 900 to 1900 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/06 to 27/11/12

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:
Saturday 1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:
Manual count 1 days
Directional ATC Count 0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:
Edge of Town Centre 1

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:
Built-Up Zone 1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Filtering Stage 3 selection:

Use Class:
A1 1 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Filtering Stage 3 selection (Cont.):

Population within 1 mile:

20,001 to 25,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

50,001 to 75,000	1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Petrol filling station:

Included in the survey count	0 days
Excluded from count or no filling station	1 days

This data displays the number of surveys within the selected set that include petrol filling station activity, and the number of surveys that do not.

Travel Plan:

No	1 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

LIST OF SITES relevant to selection parameters

1 HE-01-C-01 ALDI HEREFORDSHIRE
EIGN STREET

HEREFORD
Edge of Town Centre
Built-Up Zone
Total Gross floor area: 1219 sqm
Survey date: SATURDAY 04/03/06 Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 01 - RETAIL/C - DISCOUNT FOOD STORES
MULTI-MODAL VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	1	1219	0.246	1	1219	0.082	1	1219	0.328
08:00 - 09:00	1	1219	2.461	1	1219	0.820	1	1219	3.281
09:00 - 10:00	1	1219	5.332	1	1219	3.938	1	1219	9.270
10:00 - 11:00	1	1219	6.973	1	1219	5.989	1	1219	12.962
11:00 - 12:00	1	1219	7.547	1	1219	7.957	1	1219	15.504
12:00 - 13:00	1	1219	7.547	1	1219	7.055	1	1219	14.602
13:00 - 14:00	1	1219	6.891	1	1219	8.039	1	1219	14.930
14:00 - 15:00	1	1219	6.645	1	1219	5.906	1	1219	12.551
15:00 - 16:00	1	1219	5.004	1	1219	5.496	1	1219	10.500
16:00 - 17:00	1	1219	4.430	1	1219	6.235	1	1219	10.665
17:00 - 18:00	1	1219	3.281	1	1219	3.938	1	1219	7.219
18:00 - 19:00	1	1219	2.133	1	1219	3.035	1	1219	5.168
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			58.490			58.490			116.980

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.

Parameter summary

Trip rate parameter range selected:	1150 - 1900 (units: sqm)
Survey date date range:	01/01/06 - 27/11/12
Number of weekdays (Monday-Friday):	10
Number of Saturdays:	1
Number of Sundays:	0
Surveys manually removed from selection:	10

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 01 - RETAIL/C - DISCOUNT FOOD STORES
MULTI-MODAL CYCLISTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	1	1219	0.000	1	1219	0.000	1	1219	0.000
08:00 - 09:00	1	1219	0.000	1	1219	0.000	1	1219	0.000
09:00 - 10:00	1	1219	0.246	1	1219	0.082	1	1219	0.328
10:00 - 11:00	1	1219	0.246	1	1219	0.246	1	1219	0.492
11:00 - 12:00	1	1219	0.000	1	1219	0.164	1	1219	0.164
12:00 - 13:00	1	1219	0.000	1	1219	0.082	1	1219	0.082
13:00 - 14:00	1	1219	0.328	1	1219	0.164	1	1219	0.492
14:00 - 15:00	1	1219	0.246	1	1219	0.164	1	1219	0.410
15:00 - 16:00	1	1219	0.656	1	1219	0.410	1	1219	1.066
16:00 - 17:00	1	1219	0.082	1	1219	0.246	1	1219	0.328
17:00 - 18:00	1	1219	0.164	1	1219	0.410	1	1219	0.574
18:00 - 19:00	1	1219	0.082	1	1219	0.082	1	1219	0.164
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.050			2.050			4.100

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.

Parameter summary

Trip rate parameter range selected:	1150 - 1900 (units: sqm)
Survey date date range:	01/01/06 - 27/11/12
Number of weekdays (Monday-Friday):	10
Number of Saturdays:	1
Number of Sundays:	0
Surveys manually removed from selection:	10

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 01 - RETAIL/C - DISCOUNT FOOD STORES
MULTI-MODAL PEDESTRIANS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	1	1219	0.164	1	1219	0.164	1	1219	0.328
08:00 - 09:00	1	1219	0.574	1	1219	0.246	1	1219	0.820
09:00 - 10:00	1	1219	0.902	1	1219	1.641	1	1219	2.543
10:00 - 11:00	1	1219	4.184	1	1219	3.774	1	1219	7.958
11:00 - 12:00	1	1219	4.020	1	1219	4.758	1	1219	8.778
12:00 - 13:00	1	1219	4.184	1	1219	5.660	1	1219	9.844
13:00 - 14:00	1	1219	4.266	1	1219	3.938	1	1219	8.204
14:00 - 15:00	1	1219	5.742	1	1219	5.496	1	1219	11.238
15:00 - 16:00	1	1219	4.594	1	1219	5.004	1	1219	9.598
16:00 - 17:00	1	1219	3.035	1	1219	4.102	1	1219	7.137
17:00 - 18:00	1	1219	2.215	1	1219	3.281	1	1219	5.496
18:00 - 19:00	1	1219	2.871	1	1219	2.215	1	1219	5.086
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			36.751			40.279			77.030

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.

Parameter summary

Trip rate parameter range selected:	1150 - 1900 (units: sqm)
Survey date date range:	01/01/06 - 27/11/12
Number of weekdays (Monday-Friday):	10
Number of Saturdays:	1
Number of Sundays:	0
Surveys manually removed from selection:	10

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 01 - RETAIL/C - DISCOUNT FOOD STORES
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	1	1219	0.000	1	1219	0.000	1	1219	0.000
08:00 - 09:00	1	1219	0.000	1	1219	0.000	1	1219	0.000
09:00 - 10:00	1	1219	0.000	1	1219	0.000	1	1219	0.000
10:00 - 11:00	1	1219	0.000	1	1219	0.000	1	1219	0.000
11:00 - 12:00	1	1219	0.000	1	1219	0.000	1	1219	0.000
12:00 - 13:00	1	1219	0.000	1	1219	0.000	1	1219	0.000
13:00 - 14:00	1	1219	0.000	1	1219	0.000	1	1219	0.000
14:00 - 15:00	1	1219	0.000	1	1219	0.000	1	1219	0.000
15:00 - 16:00	1	1219	0.000	1	1219	0.000	1	1219	0.000
16:00 - 17:00	1	1219	0.000	1	1219	0.000	1	1219	0.000
17:00 - 18:00	1	1219	0.000	1	1219	0.000	1	1219	0.000
18:00 - 19:00	1	1219	0.000	1	1219	0.000	1	1219	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.000			0.000			0.000

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.

Parameter summary

Trip rate parameter range selected:	1150 - 1900 (units: sqm)
Survey date date range:	01/01/06 - 27/11/12
Number of weekdays (Monday-Friday):	10
Number of Saturdays:	1
Number of Sundays:	0
Surveys manually removed from selection:	10

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

APPENDIX G

STATION ROAD/ SHEPHERD LANE JUNCTIONS MODELLING OUTPUT FILES

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.1.305 [25 May 2012]
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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: (new file)
Path:
Report generation date: 11/09/2015 15:05:44

» (Default Analysis Set) - 2020 Baseline, PM
» (Default Analysis Set) - 2020 Baseline, SAT

Summary of junction performance

	PM			SAT		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
	A1 - 2020 Baseline					
Arm 1	1.55	11.14	0.61	0.96	8.67	0.49
Arm 2	1.12	10.94	0.53	0.70	8.30	0.41
Arm 3	1.28	9.97	0.56	1.23	9.71	0.55
Arm 4	0.05	8.68	0.05	0.05	8.66	0.05

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

'D1 - 2020 Baseline, PM '' model duration: 16:15 - 17:45
'D2 - 2020 Baseline, SAT' model duration: 10:45 - 12:15

Run using Junctions 8.0.1.305 at 11/09/2015 15:05:43

File summary

File Description

Title	(untitled)
Location	
Site Number	
Date	03/09/2015
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	VECTOSNORTH\James.Whitton
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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

(Default Analysis Set) - 2020 Baseline, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2020 Baseline, PM	2020 Baseline	PM		ONE HOUR	16:15	17:45	90	15				✓		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
(untitled)	Roundabout	1,2,3,4				10.65	B

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Station Rd E	
2	Shepherd Ln	
3	Houghton Rd	
4	John St	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00
4	0.00	99999.00		0.00

Roundabout Geometry

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	3.00	3.75	6.00	10.30	21.50	58.00	
2	3.30	3.30	0.00	9.50	21.50	55.00	
3	3.40	3.70	6.00	6.00	21.50	55.00	
4	2.70	3.80	12.00	3.00	21.50	75.00	

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Pedestrian Crossings

Arm	Crossing Type
1	None
2	None
3	None
4	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.458	917.896
2		(calculated)	(calculated)	0.446	859.117
3		(calculated)	(calculated)	0.433	885.907
4		(calculated)	(calculated)	0.303	609.713

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	461.00	100.000
2	ONE HOUR	✓	338.00	100.000
3	ONE HOUR	✓	425.00	100.000
4	ONE HOUR	✓	20.00	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 1 (for whole period)

		To			
		1	2	3	4
	1	0.000	144.000	312.000	5.000

From	2	104.000	0.000	223.000	11.000
	3	256.000	159.000	0.000	10.000
	4	5.000	10.000	5.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.31	0.68	0.01
	2	0.31	0.00	0.66	0.03
	3	0.60	0.37	0.00	0.02
	4	0.25	0.50	0.25	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	0.000	0.000
	2	0.000	0.000	0.000	0.000
	3	0.000	0.000	0.000	0.000
	4	0.000	0.000	0.000	0.000

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)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
1	0.61	11.14	1.55	B	423.02	634.53	93.98	8.89	1.04	94.00	8.89
2	0.53	10.94	1.12	B	310.15	465.23	69.23	8.93	0.77	69.24	8.93
3	0.56	9.97	1.28	A	389.99	584.98	80.56	8.26	0.90	80.57	8.26
4	0.05	8.68	0.05	A	18.35	27.53	3.70	8.07	0.04	3.70	8.07

Main Results for each time segment

Main results: (16:15-16:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS

1	347.06	86.77	344.39	272.69	130.01	0.00	858.41	673.31	0.404	0.00	0.67	6.967	A
2	254.46	63.62	252.44	233.85	240.54	0.00	751.80	617.11	0.338	0.00	0.51	7.181	A
3	319.96	79.99	317.56	403.36	89.63	0.00	847.11	791.85	0.378	0.00	0.60	6.769	A
4	15.06	3.76	14.93	19.42	387.77	0.00	492.15	317.72	0.031	0.00	0.03	7.541	A

Main results: (16:30-16:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	414.43	103.61	413.34	327.34	156.06	0.00	846.49	673.31	0.490	0.67	0.94	8.289	A
2	303.86	75.96	303.07	280.69	288.71	0.00	730.30	617.11	0.416	0.51	0.70	8.410	A
3	382.07	95.52	381.17	484.18	107.60	0.00	839.33	791.85	0.455	0.60	0.82	7.841	A
4	17.98	4.49	17.95	23.32	465.46	0.00	468.60	317.72	0.038	0.03	0.04	7.988	A

Main results: (16:45-17:00)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	507.57	126.89	505.24	400.30	190.88	0.00	830.56	673.32	0.611	0.94	1.53	10.986	B
2	372.14	93.04	370.54	343.20	352.91	0.00	701.66	617.11	0.530	0.70	1.10	10.817	B
3	467.93	116.98	466.16	591.90	131.55	0.00	828.96	791.85	0.564	0.82	1.27	9.873	A
4	22.02	5.51	21.97	28.51	569.21	0.00	437.14	317.72	0.050	0.04	0.05	8.670	A

Main results: (17:00-17:15)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	507.57	126.89	507.48	401.82	191.55	0.00	830.25	673.32	0.611	1.53	1.55	11.145	B
2	372.14	93.04	372.09	344.57	354.46	0.00	700.97	617.11	0.531	1.10	1.12	10.941	B
3	467.93	116.98	467.87	594.45	132.10	0.00	828.72	791.85	0.565	1.27	1.28	9.971	A
4	22.02	5.51	22.02	28.62	571.35	0.00	436.49	317.72	0.050	0.05	0.05	8.685	A

Main results: (17:15-17:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	414.43	103.61	416.72	329.66	157.11	0.00	846.01	673.31	0.490	1.55	0.98	8.431	A
2	303.86	75.96	305.42	282.77	291.06	0.00	729.26	617.11	0.417	1.12	0.73	8.526	A
3	382.07	95.52	383.79	488.04	108.44	0.00	838.97	791.85	0.455	1.28	0.85	7.940	A
4	17.98	4.49	18.03	23.49	468.74	0.00	467.60	317.72	0.038	0.05	0.04	8.009	A

Main results: (17:30-17:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	347.06	86.77	348.22	275.62	131.37	0.00	857.79	673.31	0.405	0.98	0.69	7.080	A
2	254.46	63.62	255.29	236.37	243.22	0.00	750.60	617.11	0.339	0.73	0.52	7.279	A
3	319.96	79.99	320.90	407.88	90.64	0.00	846.67	791.85	0.378	0.85	0.61	6.858	A
4	15.06	3.76	15.09	19.64	391.90	0.00	490.90	317.72	0.031	0.04	0.03	7.568	A

Queueing Delay Results for each time segment

Queueing Delay results: (16:15-16:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	9.63	0.64	6.967	A	A
2	7.28	0.49	7.181	A	A
3	8.63	0.58	6.769	A	A

4	0.45	0.03	7.541	A	A

Queueing Delay results: (16:30-16:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	13.64	0.91	8.289	A	A
2	10.18	0.68	8.410	A	A
3	11.95	0.80	7.841	A	A
4	0.58	0.04	7.988	A	A

Queueing Delay results: (16:45-17:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	21.65	1.44	10.986	B	B
2	15.75	1.05	10.817	B	B
3	18.11	1.21	9.873	A	A
4	0.77	0.05	8.670	A	A

Queueing Delay results: (17:00-17:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	23.09	1.54	11.145	B	B
2	16.67	1.11	10.941	B	B
3	19.12	1.27	9.971	A	A
4	0.79	0.05	8.685	A	A

Queueing Delay results: (17:15-17:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	15.31	1.02	8.431	A	A
2	11.32	0.75	8.526	A	A
3	13.24	0.88	7.940	A	A
4	0.62	0.04	8.009	A	A

Queueing Delay results: (17:30-17:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	10.66	0.71	7.080	A	A
2	8.02	0.53	7.279	A	A
3	9.50	0.63	6.858	A	A
4	0.49	0.03	7.568	A	A

(Default Analysis Set) - 2020 Baseline, SAT

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2020 Baseline, SAT	2020 Baseline	SAT		ONE HOUR	10:45	12:15	90	15				✓		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
(untitled)	Roundabout	1,2,3,4				8.98	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Station Rd E	
2	Shepherd Ln	
3	Houghton Rd	
4	John St	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	0.00	99999.00		0.00
2	0.00	99999.00		0.00
3	0.00	99999.00		0.00
4	0.00	99999.00		0.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	3.00	3.75	6.00	10.30	21.50	58.00	
2	3.30	3.30	0.00	9.50	21.50	55.00	
3	3.40	3.70	6.00	6.00	21.50	55.00	
4	2.70	3.80	12.00	3.00	21.50	75.00	

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Pedestrian Crossings

Arm	Crossing Type
1	None
2	None
3	None
4	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.458	917.896
2		(calculated)	(calculated)	0.446	859.117
3		(calculated)	(calculated)	0.433	885.907
4		(calculated)	(calculated)	0.303	609.713

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	365.00	100.000
2	ONE HOUR	✓	279.00	100.000
3	ONE HOUR	✓	418.00	100.000
4	ONE HOUR	✓	19.00	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	127.000	238.000	0.000
	2	110.000	0.000	163.000	6.000
	3	222.000	186.000	0.000	10.000
	4	5.000	11.000	3.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.35	0.65	0.00
	2	0.39	0.00	0.58	0.02
	3	0.53	0.44	0.00	0.02
	4	0.26	0.58	0.16	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	0.000	0.000
	2	0.000	0.000	0.000	0.000
	3	0.000	0.000	0.000	0.000
	4	0.000	0.000	0.000	0.000

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)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
1	0.49	8.67	0.96	A	334.93	502.40	61.79	7.38	0.69	61.80	7.38
2	0.41	8.30	0.70	A	256.02	384.02	46.42	7.25	0.52	46.42	7.25
3	0.55	9.71	1.23	A	383.56	575.35	77.70	8.10	0.86	77.72	8.10
4	0.05	8.66	0.05	A	17.43	26.15	3.51	8.05	0.04	3.51	8.05

Main Results for each time segment

Main results: (10:45-11:00)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	274.79	68.70	272.90	251.87	149.45	0.00	849.52	658.46	0.323	0.00	0.47	6.223	A
2	210.05	52.51	208.58	242.16	180.18	0.00	778.73	646.09	0.270	0.00	0.37	6.300	A
3	314.69	78.67	312.36	302.04	86.72	0.00	848.37	769.62	0.371	0.00	0.58	6.689	A
4	14.30	3.58	14.19	11.96	387.13	0.00	492.34	304.73	0.029	0.00	0.03	7.526	A

Main results: (11:00-11:15)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	328.13	82.03	327.47	302.31	179.39	0.00	835.82	658.46	0.393	0.47	0.64	7.073	A
2	250.82	62.70	250.34	290.64	216.22	0.00	762.65	646.09	0.329	0.37	0.48	7.021	A
3	375.77	93.94	374.92	362.47	104.08	0.00	840.85	769.62	0.447	0.58	0.80	7.711	A
4	17.08	4.27	17.05	14.35	464.65	0.00	468.84	304.73	0.036	0.03	0.04	7.968	A

Main results: (11:15-11:30)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	401.87	100.47	400.63	369.81	219.42	0.00	817.50	658.47	0.492	0.64	0.95	8.608	A

2	307.18	76.80	306.33	355.53	264.53	0.00	741.10	646.09	0.415	0.48	0.70	8.263	A
3	460.23	115.06	458.56	443.50	127.36	0.00	830.77	769.62	0.554	0.80	1.21	9.627	A
4	20.92	5.23	20.87	17.56	568.36	0.00	437.40	304.73	0.048	0.04	0.05	8.641	A

Main results: (11:30-11:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	401.87	100.47	401.84	371.01	220.18	0.00	817.16	658.47	0.492	0.95	0.96	8.666	A
2	307.18	76.80	307.16	356.69	265.32	0.00	740.74	646.09	0.415	0.70	0.70	8.301	A
3	460.23	115.06	460.17	444.78	127.71	0.00	830.62	769.62	0.554	1.21	1.23	9.713	A
4	20.92	5.23	20.92	17.61	570.27	0.00	436.82	304.73	0.048	0.05	0.05	8.655	A

Main results: (11:45-12:00)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	328.13	82.03	329.34	304.16	180.56	0.00	835.28	658.46	0.393	0.96	0.66	7.134	A
2	250.82	62.70	251.64	292.44	217.45	0.00	762.10	646.09	0.329	0.70	0.50	7.065	A
3	375.77	93.94	377.40	364.47	104.63	0.00	840.61	769.62	0.447	1.23	0.82	7.798	A
4	17.08	4.27	17.13	14.44	467.59	0.00	467.95	304.73	0.037	0.05	0.04	7.985	A

Main results: (12:00-12:15)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	274.79	68.70	275.48	254.39	150.99	0.00	848.81	658.46	0.324	0.66	0.48	6.285	A
2	210.05	52.51	210.54	244.58	181.89	0.00	777.96	646.09	0.270	0.50	0.37	6.349	A
3	314.69	78.67	315.59	304.89	87.54	0.00	848.01	769.62	0.371	0.82	0.60	6.772	A
4	14.30	3.58	14.34	12.08	391.04	0.00	491.16	304.73	0.029	0.04	0.03	7.552	A

Queueing Delay Results for each time segment

Queueing Delay results: (10:45-11:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	6.85	0.46	6.223	A	A
2	5.30	0.35	6.300	A	A
3	8.40	0.56	6.689	A	A
4	0.43	0.03	7.526	A	A

Queueing Delay results: (11:00-11:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	9.31	0.62	7.073	A	A
2	7.08	0.47	7.021	A	A
3	11.57	0.77	7.711	A	A
4	0.55	0.04	7.968	A	A

Queueing Delay results: (11:15-11:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	13.70	0.91	8.608	A	A
2	10.11	0.67	8.263	A	A
3	17.40	1.16	9.627	A	A
4	0.73	0.05	8.641	A	A

Queueing Delay results: (11:30-11:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	14.33	0.96	8.666	A	A
2	10.51	0.70	8.301	A	A
3	18.34	1.22	9.713	A	A
4	0.75	0.05	8.655	A	A

Queueing Delay results: (11:45-12:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	10.16	0.68	7.134	A	A
2	7.67	0.51	7.065	A	A
3	12.78	0.85	7.798	A	A
4	0.59	0.04	7.985	A	A

Queueing Delay results: (12:00-12:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	7.45	0.50	6.285	A	A
2	5.74	0.38	6.349	A	A
3	9.22	0.61	6.772	A	A
4	0.46	0.03	7.552	A	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.1.305 [25 May 2012]
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Filename: (new file)
Path:
Report generation date: 11/09/2015 15:18:48

» (Default Analysis Set) - 2020 Baseline with Dev, PM
» (Default Analysis Set) - 2020 Baseline with Dev, Sat

Summary of junction performance

	PM			Sat		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
	A1 - 2020 Baseline with Dev					
Junction 1 - Arm 1	1.74	11.98	0.64	1.23	9.83	0.56
Junction 1 - Arm 2	1.18	11.36	0.54	0.78	8.85	0.44
Junction 1 - Arm 3	1.34	10.30	0.58	1.36	10.44	0.58
Junction 1 - Arm 4	0.06	8.81	0.05	0.05	8.91	0.05
Junction 2 - Arm 1	1.00	7.32	0.50	0.72	6.31	0.42
Junction 2 - Arm 2	0.06	5.27	0.05	0.13	5.22	0.12
Junction 2 - Arm 3	0.86	7.37	0.46	0.86	7.37	0.46
Junction 2 - Arm 4	0.07	5.21	0.07	0.01	5.04	0.01

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

"D1 - 2020 Baseline with Dev INC GROWTH, PM" model duration: 16:15 - 17:45
"D2 - 2020 Baseline with Dev INC GROWTH, Sat" model duration: 10:45 - 12:15
"D3 - 2020 Baseline with Dev, PM " model duration: 16:15 - 17:45
"D4 - 2020 Baseline with Dev, Sat" model duration: 10:45 - 12:15
"D5 - 2015 Existing, PM" model duration: 16:15 - 17:45
"D6 - 2015 Existing, Sat" model duration: 10:45 - 12:15

Run using Junctions 8.0.1.305 at 11/09/2015 15:18:47

File summary

File Description

Title	(untitled)
Location	
Site Number	
Date	22/07/2015
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	VECTOSNORTH\James.Whitton
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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

(Default Analysis Set) - 2020 Baseline with Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Linked Roundabout	Junction 1 - Arm 1	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 2 - Arm 3	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2020 Baseline with Dev, PM	2020 Baseline with Dev	PM		Varies by Arm	16:15	17:45	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	Existing Rnbt	Roundabout	1,2,3,4				11.19	B
2	New Store Access Rnbt	Roundabout	1,2,3,4				7.15	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Junction	Arm	Name	Description
1	1	Station Rd E	
1	2	Shepherd Ln	
1	3	Houghton Rd	
1	4	John St	
2	1	Station Road E	
2	2	Store Access	
2	3	Station Rd W	
2	4	Holly Bush Drive	

Capacity Options

Junction	Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	1	0.00	99999.00		0.00
1	2	0.00	99999.00		0.00
1	3	0.00	99999.00		0.00
1	4	0.00	99999.00		0.00
2	1	0.00	99999.00		0.00
2	2	0.00	99999.00		0.00
2	3	0.00	99999.00		0.00
2	4	0.00	99999.00		0.00

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	1	3.00	3.75	6.00	10.30	21.50	58.00	
1	2	3.30	3.30	0.00	9.50	21.50	55.00	
1	3	3.40	3.70	6.00	6.00	21.50	55.00	
1	4	2.70	3.80	12.00	3.00	21.50	75.00	
2	1	3.20	4.00	5.00	12.00	21.50	50.00	
2	2	3.75	3.75	0.00	10.00	18.00	60.00	
2	3	3.50	3.50	0.00	11.40	21.50	57.00	
2	4	3.50	3.50	0.00	10.90	18.00	54.00	

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Pedestrian Crossings

Junction	Arm	Crossing Type
1	1	None
1	2	None
1	3	None
1	4	None
2	1	None
2	2	None
2	3	None
2	4	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1	1		(calculated)	(calculated)	0.458	917.896
1	2		(calculated)	(calculated)	0.446	859.117
1	3		(calculated)	(calculated)	0.433	885.907
1	4		(calculated)	(calculated)	0.303	609.713
2	1		(calculated)	(calculated)	0.490	1014.666

2	2		(calculated)	(calculated)	0.465	962.404
2	3		(calculated)	(calculated)	0.462	922.020
2	4		(calculated)	(calculated)	0.467	928.887

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Junction	Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	1	Linked Arm		N/A	N/A
1	2	ONE HOUR	✓	343.00	100.000
1	3	ONE HOUR	✓	431.00	100.000
1	4	ONE HOUR	✓	21.00	100.000
2	1	ONE HOUR	✓	450.00	100.000
2	2	ONE HOUR	✓	36.00	100.000
2	3	Linked Arm		N/A	N/A
2	4	ONE HOUR	✓	47.00	100.000

Linked Arm Data

Junction	Arm	From Junction ID	From Arm ID	Link Type	Flow Source	Uniform Flow (PCU/hr)	Flow Multiplier (%)	Internal Storage Space (PCU)
1	1	2	3	Simple (vertical queueing)	Normal	0.00	100.00	N/A
2	3	1	1	Simple (vertical queueing)	Normal	0.00	100.00	N/A

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	152.000	324.000	6.000
	2	113.000	0.000	219.000	11.000
	3	265.000	156.000	0.000	10.000
	4	6.000	10.000	5.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.32	0.67	0.01
	2	0.33	0.00	0.64	0.03

	3	0.61	0.36	0.00	0.02
	4	0.29	0.48	0.24	0.00

Turning Counts or Proportions (PCU/hr) - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	0.000	10.000	428.000	12.000
	2	10.000	0.000	26.000	0.000
	3	330.000	22.000	0.000	31.000
	4	18.000	0.000	29.000	0.000

Turning Proportions (PCU) - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.02	0.95	0.03
	2	0.28	0.00	0.72	0.00
	3	0.86	0.06	0.00	0.08
	4	0.38	0.00	0.62	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	0.000	0.000
	2	0.000	0.000	0.000	0.000
	3	0.000	0.000	0.000	0.000
	4	0.000	0.000	0.000	0.000

Average PCU Per Vehicle - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	0.000	0.000
	2	0.000	0.000	0.000	0.000
	3	0.000	0.000	0.000	0.000

	4	0.000	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
1	1	0.64	11.98	1.74	B	442.84	664.26	103.50	9.35	1.15	103.52	9.35
1	2	0.54	11.36	1.18	B	314.74	472.11	72.20	9.18	0.80	72.21	9.18
1	3	0.58	10.30	1.34	B	395.49	593.24	83.65	8.46	0.93	83.66	8.46
1	4	0.05	8.81	0.06	A	19.27	28.90	3.94	8.17	0.04	3.94	8.17
2	1	0.50	7.32	1.00	A	412.93	619.39	65.44	6.34	0.73	65.45	6.34
2	2	0.05	5.27	0.06	A	33.03	49.55	4.09	4.95	0.05	4.09	4.95
2	3	0.46	7.37	0.86	A	351.98	527.97	57.22	6.50	0.64	57.23	6.50
2	4	0.07	5.21	0.07	A	43.13	64.69	5.32	4.94	0.06	5.32	4.94

Main Results for each time segment

Main results: (16:15-16:30)

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	361.47	90.37	358.61	286.85	127.75	0.00	859.45	684.67	0.421	0.00	0.72	7.149	A
1	2	258.23	64.56	256.14	237.10	249.25	0.00	747.91	616.46	0.345	0.00	0.52	7.290	A
1	3	324.48	81.12	322.01	408.33	97.06	0.00	843.89	785.74	0.385	0.00	0.62	6.867	A
1	4	15.81	3.95	15.68	20.15	398.93	0.00	488.77	315.45	0.032	0.00	0.03	7.607	A
2	1	338.78	84.70	336.74	266.57	38.09	0.00	995.98	837.69	0.340	0.00	0.51	5.445	A
2	2	27.10	6.78	26.96	23.86	350.98	0.00	799.34	437.02	0.034	0.00	0.03	4.661	A
2	3	286.85	71.71	285.04	361.47	16.47	0.00	914.41	855.57	0.314	0.00	0.45	5.704	A
2	4	35.38	8.85	35.20	32.05	269.46	0.00	803.12	505.23	0.044	0.00	0.05	4.686	A

Main results: (16:30-16:45)

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	433.51	108.38	432.26	344.35	153.36	0.00	847.73	684.67	0.511	0.72	1.03	8.638	A
1	2	308.35	77.09	307.52	285.19	300.43	0.00	725.08	616.46	0.425	0.52	0.73	8.604	A
1	3	387.46	96.87	386.52	491.40	116.55	0.00	835.45	785.74	0.464	0.62	0.85	8.002	A
1	4	18.88	4.72	18.84	24.21	478.87	0.00	464.53	315.45	0.041	0.03	0.04	8.077	A
2	1	404.54	101.14	403.86	321.34	45.79	0.00	992.21	837.69	0.408	0.51	0.68	6.110	A
2	2	32.36	8.09	32.33	28.72	420.93	0.00	766.84	437.02	0.042	0.03	0.04	4.901	A
2	3	344.35	86.09	343.76	433.51	19.75	0.00	912.89	855.57	0.377	0.45	0.60	6.318	A
2	4	42.25	10.56	42.21	38.59	324.92	0.00	777.24	505.23	0.054	0.05	0.06	4.897	A

Main results: (16:45-17:00)

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	530.53	132.63	527.83	421.05	187.55	0.00	832.08	684.68	0.638	1.03	1.70	11.725	B

1	2	377.65	94.41	375.93	348.51	366.87	0.00	695.43	616.46	0.543	0.73	1.16	11.206	B
1	3	474.54	118.63	472.65	600.33	142.48	0.00	824.23	785.74	0.576	0.85	1.32	10.183	B
1	4	23.12	5.78	23.07	29.59	585.54	0.00	432.19	315.45	0.054	0.04	0.06	8.798	A
2	1	495.46	123.86	494.21	392.72	56.02	0.00	987.20	837.68	0.502	0.68	0.99	7.282	A
2	2	39.64	9.91	39.58	35.11	515.12	0.00	723.07	437.02	0.055	0.04	0.06	5.266	A
2	3	421.05	105.26	420.06	530.53	24.17	0.00	910.84	855.57	0.462	0.60	0.85	7.320	A
2	4	51.75	12.94	51.68	47.18	397.05	0.00	743.57	505.23	0.070	0.06	0.07	5.203	A

Main results: (17:00-17:15)

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	531.76	132.94	531.61	422.73	188.25	0.00	831.76	684.68	0.639	1.70	1.74	11.978	B
1	2	377.65	94.41	377.58	350.39	369.47	0.00	694.27	616.46	0.544	1.16	1.18	11.360	B
1	3	474.54	118.63	474.47	603.93	143.12	0.00	823.95	785.74	0.576	1.32	1.34	10.296	B
1	4	23.12	5.78	23.12	29.74	587.85	0.00	431.49	315.45	0.054	0.06	0.06	8.815	A
2	1	495.46	123.86	495.43	395.02	56.21	0.00	987.10	837.68	0.502	0.99	1.00	7.321	A
2	2	39.64	9.91	39.64	35.29	516.35	0.00	722.50	437.02	0.055	0.06	0.06	5.271	A
2	3	422.73	105.68	422.68	531.76	24.22	0.00	910.82	855.57	0.464	0.85	0.86	7.374	A
2	4	51.75	12.94	51.75	47.42	399.48	0.00	742.44	505.23	0.070	0.07	0.07	5.211	A

Main results: (17:15-17:30)

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	435.44	108.86	438.08	346.91	154.43	0.00	847.24	684.67	0.514	1.74	1.08	8.856	A
1	2	308.35	77.09	310.03	288.07	304.44	0.00	723.29	616.46	0.426	1.18	0.76	8.747	A
1	3	387.46	96.87	389.30	496.94	117.53	0.00	835.03	785.74	0.464	1.34	0.88	8.111	A
1	4	18.88	4.72	18.93	24.43	482.41	0.00	463.46	315.45	0.041	0.06	0.04	8.100	A
2	1	404.54	101.14	405.75	324.94	46.09	0.00	992.06	837.69	0.408	1.00	0.70	6.152	A
2	2	32.36	8.09	32.42	29.00	422.85	0.00	765.94	437.02	0.042	0.06	0.04	4.907	A
2	3	346.91	86.73	347.86	435.44	19.82	0.00	912.85	855.57	0.380	0.86	0.62	6.381	A
2	4	42.25	10.56	42.32	38.98	328.71	0.00	775.47	505.23	0.054	0.07	0.06	4.910	A

Main results: (17:30-17:45)

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	364.35	91.09	365.68	290.00	129.12	0.00	858.82	684.67	0.424	1.08	0.75	7.318	A
1	2	258.23	64.56	259.10	240.66	254.13	0.00	745.73	616.46	0.346	0.76	0.54	7.413	A
1	3	324.48	81.12	325.47	415.01	98.22	0.00	843.39	785.74	0.385	0.88	0.63	6.963	A
1	4	15.81	3.95	15.85	20.41	403.28	0.00	487.45	315.45	0.032	0.04	0.03	7.633	A
2	1	338.78	84.70	339.49	271.50	38.55	0.00	995.76	837.69	0.340	0.70	0.52	5.493	A
2	2	27.10	6.78	27.14	24.24	353.80	0.00	798.02	437.02	0.034	0.04	0.04	4.669	A
2	3	290.00	72.50	290.61	364.35	16.59	0.00	914.35	855.57	0.317	0.62	0.47	5.776	A
2	4	35.38	8.85	35.43	32.57	274.62	0.00	800.71	505.23	0.044	0.06	0.05	4.705	A

Queueing Delay Results for each time segment

Queueing Delay results: (16:15-16:30)

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	10.27	0.68	7.149	A	A
1	2	7.49	0.50	7.290	A	A
1	3	8.88	0.59	6.867	A	A
1	4	0.48	0.03	7.607	A	A
2	1	7.41	0.49	5.445	A	A

2	2	0.51	0.03	4.661	A	A
2	3	6.57	0.44	5.704	A	A
2	4	0.67	0.04	4.686	A	A

Queueing Delay results: (16:30-16:45)

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	14.83	0.99	8.638	A	A
1	2	10.56	0.70	8.604	A	A
1	3	12.35	0.82	8.002	A	A
1	4	0.62	0.04	8.077	A	A
2	1	9.95	0.66	6.110	A	A
2	2	0.65	0.04	4.901	A	A
2	3	8.76	0.58	6.318	A	A
2	4	0.84	0.06	4.897	A	A

Queueing Delay results: (16:45-17:00)

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	24.01	1.60	11.725	B	B
1	2	16.51	1.10	11.206	B	B
1	3	18.89	1.26	10.183	B	B
1	4	0.82	0.05	8.798	A	A
2	1	14.37	0.96	7.282	A	A
2	2	0.85	0.06	5.266	A	A
2	3	12.30	0.82	7.320	A	A
2	4	1.10	0.07	5.203	A	A

Queueing Delay results: (17:00-17:15)

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	25.86	1.72	11.978	B	B
1	2	17.53	1.17	11.360	B	B
1	3	20.00	1.33	10.296	B	B
1	4	0.84	0.06	8.815	A	A
2	1	14.95	1.00	7.321	A	A
2	2	0.87	0.06	5.271	A	A
2	3	12.82	0.85	7.374	A	A
2	4	1.12	0.07	5.211	A	A

Queueing Delay results: (17:15-17:30)

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	16.94	1.13	8.856	A	A
1	2	11.80	0.79	8.747	A	A
1	3	13.73	0.92	8.111	A	A
1	4	0.66	0.04	8.100	A	A
2	1	10.76	0.72	6.152	A	A
2	2	0.68	0.05	4.907	A	A
2	3	9.57	0.64	6.381	A	A
2	4	0.88	0.06	4.910	A	A

Queueing Delay results: (17:30-17:45)

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service

1	1	11.59	0.77	7.318	A	A
1	2	8.30	0.55	7.413	A	A
1	3	9.79	0.65	6.963	A	A
1	4	0.52	0.03	7.633	A	A
2	1	8.00	0.53	5.493	A	A
2	2	0.54	0.04	4.669	A	A
2	3	7.20	0.48	5.776	A	A
2	4	0.71	0.05	4.705	A	A

(Default Analysis Set) - 2020 Baseline with Dev, Sat

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Linked Roundabout	Junction 1 - Arm 1	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 2 - Arm 3	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2020 Baseline with Dev, Sat	2020 Baseline with Dev	Sat		Varies by Arm	10:45	12:15	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	Existing Rnbt	Roundabout	1,2,3,4				9.80	A
2	New Store Access Rnbt	Roundabout	1,2,3,4				6.68	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Junction	Arm	Name	Description

1	1	Station Rd E	
1	2	Shepherd Ln	
1	3	Houghton Rd	
1	4	John St	
2	1	Station Road E	
2	2	Store Access	
2	3	Station Rd W	
2	4	Holly Bush Drive	

Capacity Options

Junction	Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	1	0.00	99999.00		0.00
1	2	0.00	99999.00		0.00
1	3	0.00	99999.00		0.00
1	4	0.00	99999.00		0.00
2	1	0.00	99999.00		0.00
2	2	0.00	99999.00		0.00
2	3	0.00	99999.00		0.00
2	4	0.00	99999.00		0.00

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	1	3.00	3.75	6.00	10.30	21.50	58.00	
1	2	3.30	3.30	0.00	9.50	21.50	55.00	
1	3	3.40	3.70	6.00	6.00	21.50	55.00	
1	4	2.70	3.80	12.00	3.00	21.50	75.00	
2	1	3.20	4.00	5.00	12.00	21.50	50.00	
2	2	3.75	3.75	0.00	10.00	18.00	60.00	
2	3	3.50	3.50	0.00	11.40	21.50	57.00	
2	4	3.50	3.50	0.00	10.90	18.00	54.00	

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Pedestrian Crossings

Junction	Arm	Crossing Type
1	1	None
1	2	None
1	3	None
1	4	None
2	1	None
2	2	None
2	3	None
2	4	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1	1		(calculated)	(calculated)	0.458	917.896
1	2		(calculated)	(calculated)	0.446	859.117
1	3		(calculated)	(calculated)	0.433	885.907
1	4		(calculated)	(calculated)	0.303	609.713
2	1		(calculated)	(calculated)	0.490	1014.666
2	2		(calculated)	(calculated)	0.465	962.404

2	2		(calculated)	(calculated)	0.465	962.404
2	3		(calculated)	(calculated)	0.462	922.020
2	4		(calculated)	(calculated)	0.467	928.887

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Junction	Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	1	Linked Arm		N/A	N/A
1	2	ONE HOUR	✓	291.00	100.000
1	3	ONE HOUR	✓	432.00	100.000
1	4	ONE HOUR	✓	19.00	100.000
2	1	ONE HOUR	✓	374.00	100.000
2	2	ONE HOUR	✓	83.00	100.000
2	3	Linked Arm		N/A	N/A
2	4	ONE HOUR	✓	7.00	100.000

Linked Arm Data

Junction	Arm	From Junction ID	From Arm ID	Link Type	Flow Source	Uniform Flow (PCU/hr)	Flow Multiplier (%)	Internal Storage Space (PCU)
1	1	2	3	Simple (vertical queueing)	Normal	0.00	100.00	N/A
2	3	1	1	Simple (vertical queueing)	Normal	0.00	100.00	N/A

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	149.000	263.000	2.000
	2	130.000	0.000	155.000	6.000
	3	247.000	176.000	0.000	9.000
	4	6.000	10.000	3.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.36	0.64	0.00
	2	0.45	0.00	0.53	0.02
	3	0.57	0.41	0.00	0.02

	4	0.32	0.53	0.16	0.00

Turning Counts or Proportions (PCU/hr) - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	0.000	23.000	350.000	1.000
	2	23.000	0.000	60.000	0.000
	3	324.000	56.000	0.000	4.000
	4	2.000	0.000	5.000	0.000

Turning Proportions (PCU) - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.06	0.94	0.00
	2	0.28	0.00	0.72	0.00
	3	0.84	0.15	0.00	0.01
	4	0.29	0.00	0.71	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	0.000	0.000
	2	0.000	0.000	0.000	0.000
	3	0.000	0.000	0.000	0.000
	4	0.000	0.000	0.000	0.000

Average PCU Per Vehicle - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	0.000	0.000
	2	0.000	0.000	0.000	0.000
	3	0.000	0.000	0.000	0.000
	4	0.000	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
1	1	0.56	9.83	1.23	A	380.52	570.78	77.10	8.10	0.86	77.11	8.11
1	2	0.44	8.85	0.78	A	267.03	400.54	50.82	7.61	0.56	50.83	7.61
1	3	0.58	10.44	1.36	B	396.41	594.62	84.73	8.55	0.94	84.74	8.55
1	4	0.05	8.91	0.05	A	17.43	26.15	3.59	8.24	0.04	3.59	8.24
2	1	0.42	6.31	0.72	A	343.19	514.78	48.51	5.65	0.54	48.51	5.65
2	2	0.12	5.22	0.13	A	76.16	114.24	9.36	4.92	0.10	9.36	4.92
2	3	0.46	7.37	0.86	A	351.08	526.62	57.07	6.50	0.63	57.08	6.50
2	4	0.01	5.04	0.01	A	6.42	9.64	0.77	4.81	0.01	0.77	4.81

Main Results for each time segment

Main results: (10:45-11:00)

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	310.71	77.68	308.45	286.18	141.19	0.00	853.29	683.75	0.364	0.00	0.57	6.582	A
1	2	219.08	54.77	217.51	249.96	199.68	0.00	770.03	642.80	0.285	0.00	0.39	6.497	A
1	3	325.23	81.31	322.74	314.04	103.14	0.00	841.26	754.43	0.387	0.00	0.62	6.910	A
1	4	14.30	3.58	14.18	12.70	413.19	0.00	484.44	298.69	0.030	0.00	0.03	7.653	A
2	1	281.57	70.39	279.99	258.66	45.22	0.00	992.49	788.03	0.284	0.00	0.39	5.041	A
2	2	62.49	15.62	62.17	58.69	266.52	0.00	838.58	462.47	0.075	0.00	0.08	4.634	A
2	3	286.18	71.54	284.37	310.71	17.98	0.00	913.71	861.80	0.313	0.00	0.45	5.704	A
2	4	5.27	1.32	5.24	3.71	298.63	0.00	789.51	471.04	0.007	0.00	0.01	4.590	A

Main results: (11:00-11:15)

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	372.57	93.14	371.70	343.51	169.50	0.00	840.34	683.76	0.443	0.57	0.78	7.667	A
1	2	261.60	65.40	261.07	300.58	240.61	0.00	751.76	642.80	0.348	0.39	0.53	7.329	A
1	3	388.36	97.09	387.41	377.87	123.81	0.00	832.31	754.43	0.467	0.62	0.86	8.073	A
1	4	17.08	4.27	17.05	15.25	495.96	0.00	459.35	298.69	0.037	0.03	0.04	8.139	A
2	1	336.22	84.05	335.75	311.80	54.50	0.00	987.94	788.03	0.340	0.39	0.51	5.516	A
2	2	74.62	18.65	74.53	70.66	319.59	0.00	813.92	462.47	0.092	0.08	0.10	4.868	A
2	3	343.51	85.88	342.93	372.57	21.55	0.00	912.06	861.80	0.377	0.45	0.60	6.318	A
2	4	6.29	1.57	6.29	4.47	360.01	0.00	760.86	471.04	0.008	0.01	0.01	4.770	A

Main results: (11:15-11:30)

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	456.07	114.02	454.35	420.13	207.27	0.00	823.06	683.76	0.554	0.78	1.21	9.717	A
1	2	320.40	80.10	319.41	367.50	294.12	0.00	727.89	642.80	0.440	0.53	0.77	8.790	A

1	3	475.64	118.91	473.71	462.06	151.47	0.00	820.33	754.43	0.580	0.86	1.34	10.327	B
1	4	20.92	5.23	20.87	18.65	606.53	0.00	425.83	298.69	0.049	0.04	0.05	8.888	A
2	1	411.78	102.95	410.97	381.14	66.62	0.00	981.99	788.03	0.419	0.51	0.71	6.295	A
2	2	91.38	22.85	91.26	86.40	391.20	0.00	780.65	462.47	0.117	0.10	0.13	5.222	A
2	3	420.13	105.03	419.14	456.07	26.39	0.00	909.82	861.80	0.462	0.60	0.85	7.321	A
2	4	7.71	1.93	7.70	5.46	440.06	0.00	723.50	471.04	0.011	0.01	0.01	5.028	A

Main results: (11:30-11:45)

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	456.91	114.23	456.83	421.64	208.06	0.00	822.70	683.76	0.555	1.21	1.23	9.835	A
1	2	320.40	80.10	320.37	369.18	295.72	0.00	727.18	642.80	0.441	0.77	0.78	8.847	A
1	3	475.64	118.91	475.57	464.16	151.93	0.00	820.14	754.43	0.580	1.34	1.36	10.441	B
1	4	20.92	5.23	20.92	18.72	608.78	0.00	425.14	298.69	0.049	0.05	0.05	8.905	A
2	1	411.78	102.95	411.76	383.25	66.99	0.00	981.81	788.03	0.419	0.71	0.72	6.314	A
2	2	91.38	22.85	91.38	86.81	391.95	0.00	780.30	462.47	0.117	0.13	0.13	5.225	A
2	3	421.64	105.41	421.60	456.91	26.42	0.00	909.80	861.80	0.463	0.85	0.86	7.373	A
2	4	7.71	1.93	7.71	5.49	442.53	0.00	722.35	471.04	0.011	0.01	0.01	5.037	A

Main results: (11:45-12:00)

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	373.91	93.48	375.58	345.83	170.71	0.00	839.79	683.76	0.445	1.23	0.81	7.784	A
1	2	261.60	65.40	262.56	303.18	243.11	0.00	750.65	642.80	0.349	0.78	0.54	7.389	A
1	3	388.36	97.09	390.25	381.15	124.52	0.00	832.00	754.43	0.467	1.36	0.89	8.183	A
1	4	17.08	4.27	17.13	15.36	499.41	0.00	458.30	298.69	0.037	0.05	0.04	8.160	A
2	1	336.22	84.05	337.01	315.11	55.07	0.00	987.66	788.03	0.340	0.72	0.52	5.541	A
2	2	74.62	18.65	74.74	71.30	320.78	0.00	813.36	462.47	0.092	0.13	0.10	4.876	A
2	3	345.83	86.46	346.79	373.91	21.61	0.00	912.03	861.80	0.379	0.86	0.62	6.381	A
2	4	6.29	1.57	6.30	4.51	363.88	0.00	759.05	471.04	0.008	0.01	0.01	4.783	A

Main results: (12:00-12:15)

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	312.95	78.24	313.87	289.18	142.72	0.00	852.60	683.75	0.367	0.81	0.59	6.693	A
1	2	219.08	54.77	219.64	253.42	203.17	0.00	768.47	642.80	0.285	0.54	0.40	6.567	A
1	3	325.23	81.31	326.24	318.64	104.16	0.00	840.81	754.43	0.387	0.89	0.64	7.011	A
1	4	14.30	3.58	14.34	12.84	417.56	0.00	483.12	298.69	0.030	0.04	0.03	7.681	A
2	1	281.57	70.39	282.05	263.34	46.03	0.00	992.09	788.03	0.284	0.52	0.40	5.075	A
2	2	62.49	15.62	62.57	59.60	268.48	0.00	837.67	462.47	0.075	0.10	0.08	4.644	A
2	3	289.18	72.29	289.78	312.95	18.09	0.00	913.66	861.80	0.317	0.62	0.47	5.775	A
2	4	5.27	1.32	5.28	3.77	304.10	0.00	786.96	471.04	0.007	0.01	0.01	4.605	A

Queueing Delay Results for each time segment

Queueing Delay results: (10:45-11:00)

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	8.16	0.54	6.582	A	A
1	2	5.69	0.38	6.497	A	A
1	3	8.95	0.60	6.910	A	A
1	4	0.44	0.03	7.653	A	A
2	1	5.72	0.38	5.041	A	A
2	2	1.17	0.08	4.634	A	A

2	3	6.55	0.44	5.704	A	A
2	4	0.10	0.01	4.590	A	A

Queueing Delay results: (11:00-11:15)

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	11.40	0.76	7.667	A	A
1	2	7.70	0.51	7.329	A	A
1	3	12.48	0.83	8.073	A	A
1	4	0.56	0.04	8.139	A	A
2	1	7.50	0.50	5.516	A	A
2	2	1.48	0.10	4.868	A	A
2	3	8.74	0.58	6.318	A	A
2	4	0.12	0.01	4.770	A	A

Queueing Delay results: (11:15-11:30)

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	17.39	1.16	9.717	A	A
1	2	11.18	0.75	8.790	A	A
1	3	19.19	1.28	10.327	B	B
1	4	0.75	0.05	8.888	A	A
2	1	10.41	0.69	6.295	A	A
2	2	1.94	0.13	5.222	A	A
2	3	12.28	0.82	7.321	A	A
2	4	0.16	0.01	5.028	A	A

Queueing Delay results: (11:30-11:45)

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	18.39	1.23	9.835	A	A
1	2	11.67	0.78	8.847	A	A
1	3	20.33	1.36	10.441	B	B
1	4	0.77	0.05	8.905	A	A
2	1	10.75	0.72	6.314	A	A
2	2	1.98	0.13	5.225	A	A
2	3	12.78	0.85	7.373	A	A
2	4	0.16	0.01	5.037	A	A

Queueing Delay results: (11:45-12:00)

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	12.69	0.85	7.784	A	A
1	2	8.39	0.56	7.389	A	A
1	3	13.90	0.93	8.183	A	A
1	4	0.60	0.04	8.160	A	A
2	1	8.01	0.53	5.541	A	A
2	2	1.55	0.10	4.876	A	A
2	3	9.53	0.64	6.381	A	A
2	4	0.13	0.01	4.783	A	A

Queueing Delay results: (12:00-12:15)

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	9.06	0.60	6.693	A	A

1	2	6.20	0.41	6.567	A	A
1	3	9.88	0.66	7.011	A	A
1	4	0.47	0.03	7.681	A	A
2	1	6.12	0.41	5.075	A	A
2	2	1.24	0.08	4.644	A	A
2	3	7.18	0.48	5.775	A	A
2	4	0.10	0.01	4.605	A	A

APPENDIX H

STATION ROAD/ SITE ACCESS JUNCTIONS MODELLING OUTPUT FILES

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.1.305 [25 May 2012]
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Filename: (new file)
Path:
Report generation date: 11/09/2015 15:18:48

» (Default Analysis Set) - 2020 Baseline with Dev, PM
» (Default Analysis Set) - 2020 Baseline with Dev, Sat

Summary of junction performance

	PM			Sat		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
	A1 - 2020 Baseline with Dev					
Junction 1 - Arm 1	1.74	11.98	0.64	1.23	9.83	0.56
Junction 1 - Arm 2	1.18	11.36	0.54	0.78	8.85	0.44
Junction 1 - Arm 3	1.34	10.30	0.58	1.36	10.44	0.58
Junction 1 - Arm 4	0.06	8.81	0.05	0.05	8.91	0.05
Junction 2 - Arm 1	1.00	7.32	0.50	0.72	6.31	0.42
Junction 2 - Arm 2	0.06	5.27	0.05	0.13	5.22	0.12
Junction 2 - Arm 3	0.86	7.37	0.46	0.86	7.37	0.46
Junction 2 - Arm 4	0.07	5.21	0.07	0.01	5.04	0.01

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

"D1 - 2020 Baseline with Dev INC GROWTH, PM" model duration: 16:15 - 17:45
"D2 - 2020 Baseline with Dev INC GROWTH, Sat" model duration: 10:45 - 12:15
"D3 - 2020 Baseline with Dev, PM " model duration: 16:15 - 17:45
"D4 - 2020 Baseline with Dev, Sat" model duration: 10:45 - 12:15
"D5 - 2015 Existing, PM" model duration: 16:15 - 17:45
"D6 - 2015 Existing, Sat" model duration: 10:45 - 12:15

Run using Junctions 8.0.1.305 at 11/09/2015 15:18:47

File summary

File Description

Title	(untitled)
Location	
Site Number	
Date	22/07/2015
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	VECTOSNORTH\James.Whitton
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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

(Default Analysis Set) - 2020 Baseline with Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Linked Roundabout	Junction 1 - Arm 1	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 2 - Arm 3	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2020 Baseline with Dev, PM	2020 Baseline with Dev	PM		Varies by Arm	16:15	17:45	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	Existing Rnbt	Roundabout	1,2,3,4				11.19	B
2	New Store Access Rnbt	Roundabout	1,2,3,4				7.15	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Junction	Arm	Name	Description
1	1	Station Rd E	
1	2	Shepherd Ln	
1	3	Houghton Rd	
1	4	John St	
2	1	Station Road E	
2	2	Store Access	
2	3	Station Rd W	
2	4	Holly Bush Drive	

Capacity Options

Junction	Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	1	0.00	99999.00		0.00
1	2	0.00	99999.00		0.00
1	3	0.00	99999.00		0.00
1	4	0.00	99999.00		0.00
2	1	0.00	99999.00		0.00
2	2	0.00	99999.00		0.00
2	3	0.00	99999.00		0.00
2	4	0.00	99999.00		0.00

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	1	3.00	3.75	6.00	10.30	21.50	58.00	
1	2	3.30	3.30	0.00	9.50	21.50	55.00	
1	3	3.40	3.70	6.00	6.00	21.50	55.00	
1	4	2.70	3.80	12.00	3.00	21.50	75.00	
2	1	3.20	4.00	5.00	12.00	21.50	50.00	
2	2	3.75	3.75	0.00	10.00	18.00	60.00	
2	3	3.50	3.50	0.00	11.40	21.50	57.00	
2	4	3.50	3.50	0.00	10.90	18.00	54.00	

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Pedestrian Crossings

Junction	Arm	Crossing Type
1	1	None
1	2	None
1	3	None
1	4	None
2	1	None
2	2	None
2	3	None
2	4	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1	1		(calculated)	(calculated)	0.458	917.896
1	2		(calculated)	(calculated)	0.446	859.117
1	3		(calculated)	(calculated)	0.433	885.907
1	4		(calculated)	(calculated)	0.303	609.713
2	1		(calculated)	(calculated)	0.490	1014.666

2	2		(calculated)	(calculated)	0.465	962.404
2	3		(calculated)	(calculated)	0.462	922.020
2	4		(calculated)	(calculated)	0.467	928.887

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Junction	Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	1	Linked Arm		N/A	N/A
1	2	ONE HOUR	✓	343.00	100.000
1	3	ONE HOUR	✓	431.00	100.000
1	4	ONE HOUR	✓	21.00	100.000
2	1	ONE HOUR	✓	450.00	100.000
2	2	ONE HOUR	✓	36.00	100.000
2	3	Linked Arm		N/A	N/A
2	4	ONE HOUR	✓	47.00	100.000

Linked Arm Data

Junction	Arm	From Junction ID	From Arm ID	Link Type	Flow Source	Uniform Flow (PCU/hr)	Flow Multiplier (%)	Internal Storage Space (PCU)
1	1	2	3	Simple (vertical queueing)	Normal	0.00	100.00	N/A
2	3	1	1	Simple (vertical queueing)	Normal	0.00	100.00	N/A

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	152.000	324.000	6.000
	2	113.000	0.000	219.000	11.000
	3	265.000	156.000	0.000	10.000
	4	6.000	10.000	5.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.32	0.67	0.01
	2	0.33	0.00	0.64	0.03

	3	0.61	0.36	0.00	0.02
	4	0.29	0.48	0.24	0.00

Turning Counts or Proportions (PCU/hr) - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	0.000	10.000	428.000	12.000
	2	10.000	0.000	26.000	0.000
	3	330.000	22.000	0.000	31.000
	4	18.000	0.000	29.000	0.000

Turning Proportions (PCU) - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.02	0.95	0.03
	2	0.28	0.00	0.72	0.00
	3	0.86	0.06	0.00	0.08
	4	0.38	0.00	0.62	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	0.000	0.000
	2	0.000	0.000	0.000	0.000
	3	0.000	0.000	0.000	0.000
	4	0.000	0.000	0.000	0.000

Average PCU Per Vehicle - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	0.000	0.000
	2	0.000	0.000	0.000	0.000
	3	0.000	0.000	0.000	0.000

	4	0.000	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
1	1	0.64	11.98	1.74	B	442.84	664.26	103.50	9.35	1.15	103.52	9.35
1	2	0.54	11.36	1.18	B	314.74	472.11	72.20	9.18	0.80	72.21	9.18
1	3	0.58	10.30	1.34	B	395.49	593.24	83.65	8.46	0.93	83.66	8.46
1	4	0.05	8.81	0.06	A	19.27	28.90	3.94	8.17	0.04	3.94	8.17
2	1	0.50	7.32	1.00	A	412.93	619.39	65.44	6.34	0.73	65.45	6.34
2	2	0.05	5.27	0.06	A	33.03	49.55	4.09	4.95	0.05	4.09	4.95
2	3	0.46	7.37	0.86	A	351.98	527.97	57.22	6.50	0.64	57.23	6.50
2	4	0.07	5.21	0.07	A	43.13	64.69	5.32	4.94	0.06	5.32	4.94

Main Results for each time segment

Main results: (16:15-16:30)

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	361.47	90.37	358.61	286.85	127.75	0.00	859.45	684.67	0.421	0.00	0.72	7.149	A
1	2	258.23	64.56	256.14	237.10	249.25	0.00	747.91	616.46	0.345	0.00	0.52	7.290	A
1	3	324.48	81.12	322.01	408.33	97.06	0.00	843.89	785.74	0.385	0.00	0.62	6.867	A
1	4	15.81	3.95	15.68	20.15	398.93	0.00	488.77	315.45	0.032	0.00	0.03	7.607	A
2	1	338.78	84.70	336.74	266.57	38.09	0.00	995.98	837.69	0.340	0.00	0.51	5.445	A
2	2	27.10	6.78	26.96	23.86	350.98	0.00	799.34	437.02	0.034	0.00	0.03	4.661	A
2	3	286.85	71.71	285.04	361.47	16.47	0.00	914.41	855.57	0.314	0.00	0.45	5.704	A
2	4	35.38	8.85	35.20	32.05	269.46	0.00	803.12	505.23	0.044	0.00	0.05	4.686	A

Main results: (16:30-16:45)

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	433.51	108.38	432.26	344.35	153.36	0.00	847.73	684.67	0.511	0.72	1.03	8.638	A
1	2	308.35	77.09	307.52	285.19	300.43	0.00	725.08	616.46	0.425	0.52	0.73	8.604	A
1	3	387.46	96.87	386.52	491.40	116.55	0.00	835.45	785.74	0.464	0.62	0.85	8.002	A
1	4	18.88	4.72	18.84	24.21	478.87	0.00	464.53	315.45	0.041	0.03	0.04	8.077	A
2	1	404.54	101.14	403.86	321.34	45.79	0.00	992.21	837.69	0.408	0.51	0.68	6.110	A
2	2	32.36	8.09	32.33	28.72	420.93	0.00	766.84	437.02	0.042	0.03	0.04	4.901	A
2	3	344.35	86.09	343.76	433.51	19.75	0.00	912.89	855.57	0.377	0.45	0.60	6.318	A
2	4	42.25	10.56	42.21	38.59	324.92	0.00	777.24	505.23	0.054	0.05	0.06	4.897	A

Main results: (16:45-17:00)

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	530.53	132.63	527.83	421.05	187.55	0.00	832.08	684.68	0.638	1.03	1.70	11.725	B

1	2	377.65	94.41	375.93	348.51	366.87	0.00	695.43	616.46	0.543	0.73	1.16	11.206	B
1	3	474.54	118.63	472.65	600.33	142.48	0.00	824.23	785.74	0.576	0.85	1.32	10.183	B
1	4	23.12	5.78	23.07	29.59	585.54	0.00	432.19	315.45	0.054	0.04	0.06	8.798	A
2	1	495.46	123.86	494.21	392.72	56.02	0.00	987.20	837.68	0.502	0.68	0.99	7.282	A
2	2	39.64	9.91	39.58	35.11	515.12	0.00	723.07	437.02	0.055	0.04	0.06	5.266	A
2	3	421.05	105.26	420.06	530.53	24.17	0.00	910.84	855.57	0.462	0.60	0.85	7.320	A
2	4	51.75	12.94	51.68	47.18	397.05	0.00	743.57	505.23	0.070	0.06	0.07	5.203	A

Main results: (17:00-17:15)

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	531.76	132.94	531.61	422.73	188.25	0.00	831.76	684.68	0.639	1.70	1.74	11.978	B
1	2	377.65	94.41	377.58	350.39	369.47	0.00	694.27	616.46	0.544	1.16	1.18	11.360	B
1	3	474.54	118.63	474.47	603.93	143.12	0.00	823.95	785.74	0.576	1.32	1.34	10.296	B
1	4	23.12	5.78	23.12	29.74	587.85	0.00	431.49	315.45	0.054	0.06	0.06	8.815	A
2	1	495.46	123.86	495.43	395.02	56.21	0.00	987.10	837.68	0.502	0.99	1.00	7.321	A
2	2	39.64	9.91	39.64	35.29	516.35	0.00	722.50	437.02	0.055	0.06	0.06	5.271	A
2	3	422.73	105.68	422.68	531.76	24.22	0.00	910.82	855.57	0.464	0.85	0.86	7.374	A
2	4	51.75	12.94	51.75	47.42	399.48	0.00	742.44	505.23	0.070	0.07	0.07	5.211	A

Main results: (17:15-17:30)

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	435.44	108.86	438.08	346.91	154.43	0.00	847.24	684.67	0.514	1.74	1.08	8.856	A
1	2	308.35	77.09	310.03	288.07	304.44	0.00	723.29	616.46	0.426	1.18	0.76	8.747	A
1	3	387.46	96.87	389.30	496.94	117.53	0.00	835.03	785.74	0.464	1.34	0.88	8.111	A
1	4	18.88	4.72	18.93	24.43	482.41	0.00	463.46	315.45	0.041	0.06	0.04	8.100	A
2	1	404.54	101.14	405.75	324.94	46.09	0.00	992.06	837.69	0.408	1.00	0.70	6.152	A
2	2	32.36	8.09	32.42	29.00	422.85	0.00	765.94	437.02	0.042	0.06	0.04	4.907	A
2	3	346.91	86.73	347.86	435.44	19.82	0.00	912.85	855.57	0.380	0.86	0.62	6.381	A
2	4	42.25	10.56	42.32	38.98	328.71	0.00	775.47	505.23	0.054	0.07	0.06	4.910	A

Main results: (17:30-17:45)

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	364.35	91.09	365.68	290.00	129.12	0.00	858.82	684.67	0.424	1.08	0.75	7.318	A
1	2	258.23	64.56	259.10	240.66	254.13	0.00	745.73	616.46	0.346	0.76	0.54	7.413	A
1	3	324.48	81.12	325.47	415.01	98.22	0.00	843.39	785.74	0.385	0.88	0.63	6.963	A
1	4	15.81	3.95	15.85	20.41	403.28	0.00	487.45	315.45	0.032	0.04	0.03	7.633	A
2	1	338.78	84.70	339.49	271.50	38.55	0.00	995.76	837.69	0.340	0.70	0.52	5.493	A
2	2	27.10	6.78	27.14	24.24	353.80	0.00	798.02	437.02	0.034	0.04	0.04	4.669	A
2	3	290.00	72.50	290.61	364.35	16.59	0.00	914.35	855.57	0.317	0.62	0.47	5.776	A
2	4	35.38	8.85	35.43	32.57	274.62	0.00	800.71	505.23	0.044	0.06	0.05	4.705	A

Queueing Delay Results for each time segment

Queueing Delay results: (16:15-16:30)

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	10.27	0.68	7.149	A	A
1	2	7.49	0.50	7.290	A	A
1	3	8.88	0.59	6.867	A	A
1	4	0.48	0.03	7.607	A	A
2	1	7.41	0.49	5.445	A	A

2	2	0.51	0.03	4.661	A	A
2	3	6.57	0.44	5.704	A	A
2	4	0.67	0.04	4.686	A	A

Queueing Delay results: (16:30-16:45)

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	14.83	0.99	8.638	A	A
1	2	10.56	0.70	8.604	A	A
1	3	12.35	0.82	8.002	A	A
1	4	0.62	0.04	8.077	A	A
2	1	9.95	0.66	6.110	A	A
2	2	0.65	0.04	4.901	A	A
2	3	8.76	0.58	6.318	A	A
2	4	0.84	0.06	4.897	A	A

Queueing Delay results: (16:45-17:00)

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	24.01	1.60	11.725	B	B
1	2	16.51	1.10	11.206	B	B
1	3	18.89	1.26	10.183	B	B
1	4	0.82	0.05	8.798	A	A
2	1	14.37	0.96	7.282	A	A
2	2	0.85	0.06	5.266	A	A
2	3	12.30	0.82	7.320	A	A
2	4	1.10	0.07	5.203	A	A

Queueing Delay results: (17:00-17:15)

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	25.86	1.72	11.978	B	B
1	2	17.53	1.17	11.360	B	B
1	3	20.00	1.33	10.296	B	B
1	4	0.84	0.06	8.815	A	A
2	1	14.95	1.00	7.321	A	A
2	2	0.87	0.06	5.271	A	A
2	3	12.82	0.85	7.374	A	A
2	4	1.12	0.07	5.211	A	A

Queueing Delay results: (17:15-17:30)

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	16.94	1.13	8.856	A	A
1	2	11.80	0.79	8.747	A	A
1	3	13.73	0.92	8.111	A	A
1	4	0.66	0.04	8.100	A	A
2	1	10.76	0.72	6.152	A	A
2	2	0.68	0.05	4.907	A	A
2	3	9.57	0.64	6.381	A	A
2	4	0.88	0.06	4.910	A	A

Queueing Delay results: (17:30-17:45)

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service

1	1	11.59	0.77	7.318	A	A
1	2	8.30	0.55	7.413	A	A
1	3	9.79	0.65	6.963	A	A
1	4	0.52	0.03	7.633	A	A
2	1	8.00	0.53	5.493	A	A
2	2	0.54	0.04	4.669	A	A
2	3	7.20	0.48	5.776	A	A
2	4	0.71	0.05	4.705	A	A

(Default Analysis Set) - 2020 Baseline with Dev, Sat

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Linked Roundabout	Junction 1 - Arm 1	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.
Warning	Linked Roundabout	Junction 2 - Arm 3	If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled.

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2020 Baseline with Dev, Sat	2020 Baseline with Dev	Sat		Varies by Arm	10:45	12:15	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	Existing Rnbt	Roundabout	1,2,3,4				9.80	A
2	New Store Access Rnbt	Roundabout	1,2,3,4				6.68	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Junction	Arm	Name	Description

1	1	Station Rd E	
1	2	Shepherd Ln	
1	3	Houghton Rd	
1	4	John St	
2	1	Station Road E	
2	2	Store Access	
2	3	Station Rd W	
2	4	Holly Bush Drive	

Capacity Options

Junction	Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
1	1	0.00	99999.00		0.00
1	2	0.00	99999.00		0.00
1	3	0.00	99999.00		0.00
1	4	0.00	99999.00		0.00
2	1	0.00	99999.00		0.00
2	2	0.00	99999.00		0.00
2	3	0.00	99999.00		0.00
2	4	0.00	99999.00		0.00

Roundabout Geometry

Junction	Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
1	1	3.00	3.75	6.00	10.30	21.50	58.00	
1	2	3.30	3.30	0.00	9.50	21.50	55.00	
1	3	3.40	3.70	6.00	6.00	21.50	55.00	
1	4	2.70	3.80	12.00	3.00	21.50	75.00	
2	1	3.20	4.00	5.00	12.00	21.50	50.00	
2	2	3.75	3.75	0.00	10.00	18.00	60.00	
2	3	3.50	3.50	0.00	11.40	21.50	57.00	
2	4	3.50	3.50	0.00	10.90	18.00	54.00	

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Pedestrian Crossings

Junction	Arm	Crossing Type
1	1	None
1	2	None
1	3	None
1	4	None
2	1	None
2	2	None
2	3	None
2	4	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1	1		(calculated)	(calculated)	0.458	917.896
1	2		(calculated)	(calculated)	0.446	859.117
1	3		(calculated)	(calculated)	0.433	885.907
1	4		(calculated)	(calculated)	0.303	609.713
2	1		(calculated)	(calculated)	0.490	1014.666
2	2		(calculated)	(calculated)	0.465	962.404

2	2		(calculated)	(calculated)	0.465	962.404
2	3		(calculated)	(calculated)	0.462	922.020
2	4		(calculated)	(calculated)	0.467	928.887

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Junction	Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	1	Linked Arm		N/A	N/A
1	2	ONE HOUR	✓	291.00	100.000
1	3	ONE HOUR	✓	432.00	100.000
1	4	ONE HOUR	✓	19.00	100.000
2	1	ONE HOUR	✓	374.00	100.000
2	2	ONE HOUR	✓	83.00	100.000
2	3	Linked Arm		N/A	N/A
2	4	ONE HOUR	✓	7.00	100.000

Linked Arm Data

Junction	Arm	From Junction ID	From Arm ID	Link Type	Flow Source	Uniform Flow (PCU/hr)	Flow Multiplier (%)	Internal Storage Space (PCU)
1	1	2	3	Simple (vertical queueing)	Normal	0.00	100.00	N/A
2	3	1	1	Simple (vertical queueing)	Normal	0.00	100.00	N/A

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	149.000	263.000	2.000
	2	130.000	0.000	155.000	6.000
	3	247.000	176.000	0.000	9.000
	4	6.000	10.000	3.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.36	0.64	0.00
	2	0.45	0.00	0.53	0.02
	3	0.57	0.41	0.00	0.02

	4	0.32	0.53	0.16	0.00

Turning Counts or Proportions (PCU/hr) - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	0.000	23.000	350.000	1.000
	2	23.000	0.000	60.000	0.000
	3	324.000	56.000	0.000	4.000
	4	2.000	0.000	5.000	0.000

Turning Proportions (PCU) - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.06	0.94	0.00
	2	0.28	0.00	0.72	0.00
	3	0.84	0.15	0.00	0.01
	4	0.29	0.00	0.71	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	0.000	0.000
	2	0.000	0.000	0.000	0.000
	3	0.000	0.000	0.000	0.000
	4	0.000	0.000	0.000	0.000

Average PCU Per Vehicle - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 2 (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	0.000	0.000
	2	0.000	0.000	0.000	0.000
	3	0.000	0.000	0.000	0.000
	4	0.000	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
1	1	0.56	9.83	1.23	A	380.52	570.78	77.10	8.10	0.86	77.11	8.11
1	2	0.44	8.85	0.78	A	267.03	400.54	50.82	7.61	0.56	50.83	7.61
1	3	0.58	10.44	1.36	B	396.41	594.62	84.73	8.55	0.94	84.74	8.55
1	4	0.05	8.91	0.05	A	17.43	26.15	3.59	8.24	0.04	3.59	8.24
2	1	0.42	6.31	0.72	A	343.19	514.78	48.51	5.65	0.54	48.51	5.65
2	2	0.12	5.22	0.13	A	76.16	114.24	9.36	4.92	0.10	9.36	4.92
2	3	0.46	7.37	0.86	A	351.08	526.62	57.07	6.50	0.63	57.08	6.50
2	4	0.01	5.04	0.01	A	6.42	9.64	0.77	4.81	0.01	0.77	4.81

Main Results for each time segment

Main results: (10:45-11:00)

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	310.71	77.68	308.45	286.18	141.19	0.00	853.29	683.75	0.364	0.00	0.57	6.582	A
1	2	219.08	54.77	217.51	249.96	199.68	0.00	770.03	642.80	0.285	0.00	0.39	6.497	A
1	3	325.23	81.31	322.74	314.04	103.14	0.00	841.26	754.43	0.387	0.00	0.62	6.910	A
1	4	14.30	3.58	14.18	12.70	413.19	0.00	484.44	298.69	0.030	0.00	0.03	7.653	A
2	1	281.57	70.39	279.99	258.66	45.22	0.00	992.49	788.03	0.284	0.00	0.39	5.041	A
2	2	62.49	15.62	62.17	58.69	266.52	0.00	838.58	462.47	0.075	0.00	0.08	4.634	A
2	3	286.18	71.54	284.37	310.71	17.98	0.00	913.71	861.80	0.313	0.00	0.45	5.704	A
2	4	5.27	1.32	5.24	3.71	298.63	0.00	789.51	471.04	0.007	0.00	0.01	4.590	A

Main results: (11:00-11:15)

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	372.57	93.14	371.70	343.51	169.50	0.00	840.34	683.76	0.443	0.57	0.78	7.667	A
1	2	261.60	65.40	261.07	300.58	240.61	0.00	751.76	642.80	0.348	0.39	0.53	7.329	A
1	3	388.36	97.09	387.41	377.87	123.81	0.00	832.31	754.43	0.467	0.62	0.86	8.073	A
1	4	17.08	4.27	17.05	15.25	495.96	0.00	459.35	298.69	0.037	0.03	0.04	8.139	A
2	1	336.22	84.05	335.75	311.80	54.50	0.00	987.94	788.03	0.340	0.39	0.51	5.516	A
2	2	74.62	18.65	74.53	70.66	319.59	0.00	813.92	462.47	0.092	0.08	0.10	4.868	A
2	3	343.51	85.88	342.93	372.57	21.55	0.00	912.06	861.80	0.377	0.45	0.60	6.318	A
2	4	6.29	1.57	6.29	4.47	360.01	0.00	760.86	471.04	0.008	0.01	0.01	4.770	A

Main results: (11:15-11:30)

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	456.07	114.02	454.35	420.13	207.27	0.00	823.06	683.76	0.554	0.78	1.21	9.717	A
1	2	320.40	80.10	319.41	367.50	294.12	0.00	727.89	642.80	0.440	0.53	0.77	8.790	A

1	3	475.64	118.91	473.71	462.06	151.47	0.00	820.33	754.43	0.580	0.86	1.34	10.327	B
1	4	20.92	5.23	20.87	18.65	606.53	0.00	425.83	298.69	0.049	0.04	0.05	8.888	A
2	1	411.78	102.95	410.97	381.14	66.62	0.00	981.99	788.03	0.419	0.51	0.71	6.295	A
2	2	91.38	22.85	91.26	86.40	391.20	0.00	780.65	462.47	0.117	0.10	0.13	5.222	A
2	3	420.13	105.03	419.14	456.07	26.39	0.00	909.82	861.80	0.462	0.60	0.85	7.321	A
2	4	7.71	1.93	7.70	5.46	440.06	0.00	723.50	471.04	0.011	0.01	0.01	5.028	A

Main results: (11:30-11:45)

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	456.91	114.23	456.83	421.64	208.06	0.00	822.70	683.76	0.555	1.21	1.23	9.835	A
1	2	320.40	80.10	320.37	369.18	295.72	0.00	727.18	642.80	0.441	0.77	0.78	8.847	A
1	3	475.64	118.91	475.57	464.16	151.93	0.00	820.14	754.43	0.580	1.34	1.36	10.441	B
1	4	20.92	5.23	20.92	18.72	608.78	0.00	425.14	298.69	0.049	0.05	0.05	8.905	A
2	1	411.78	102.95	411.76	383.25	66.99	0.00	981.81	788.03	0.419	0.71	0.72	6.314	A
2	2	91.38	22.85	91.38	86.81	391.95	0.00	780.30	462.47	0.117	0.13	0.13	5.225	A
2	3	421.64	105.41	421.60	456.91	26.42	0.00	909.80	861.80	0.463	0.85	0.86	7.373	A
2	4	7.71	1.93	7.71	5.49	442.53	0.00	722.35	471.04	0.011	0.01	0.01	5.037	A

Main results: (11:45-12:00)

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	373.91	93.48	375.58	345.83	170.71	0.00	839.79	683.76	0.445	1.23	0.81	7.784	A
1	2	261.60	65.40	262.56	303.18	243.11	0.00	750.65	642.80	0.349	0.78	0.54	7.389	A
1	3	388.36	97.09	390.25	381.15	124.52	0.00	832.00	754.43	0.467	1.36	0.89	8.183	A
1	4	17.08	4.27	17.13	15.36	499.41	0.00	458.30	298.69	0.037	0.05	0.04	8.160	A
2	1	336.22	84.05	337.01	315.11	55.07	0.00	987.66	788.03	0.340	0.72	0.52	5.541	A
2	2	74.62	18.65	74.74	71.30	320.78	0.00	813.36	462.47	0.092	0.13	0.10	4.876	A
2	3	345.83	86.46	346.79	373.91	21.61	0.00	912.03	861.80	0.379	0.86	0.62	6.381	A
2	4	6.29	1.57	6.30	4.51	363.88	0.00	759.05	471.04	0.008	0.01	0.01	4.783	A

Main results: (12:00-12:15)

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
1	1	312.95	78.24	313.87	289.18	142.72	0.00	852.60	683.75	0.367	0.81	0.59	6.693	A
1	2	219.08	54.77	219.64	253.42	203.17	0.00	768.47	642.80	0.285	0.54	0.40	6.567	A
1	3	325.23	81.31	326.24	318.64	104.16	0.00	840.81	754.43	0.387	0.89	0.64	7.011	A
1	4	14.30	3.58	14.34	12.84	417.56	0.00	483.12	298.69	0.030	0.04	0.03	7.681	A
2	1	281.57	70.39	282.05	263.34	46.03	0.00	992.09	788.03	0.284	0.52	0.40	5.075	A
2	2	62.49	15.62	62.57	59.60	268.48	0.00	837.67	462.47	0.075	0.10	0.08	4.644	A
2	3	289.18	72.29	289.78	312.95	18.09	0.00	913.66	861.80	0.317	0.62	0.47	5.775	A
2	4	5.27	1.32	5.28	3.77	304.10	0.00	786.96	471.04	0.007	0.01	0.01	4.605	A

Queueing Delay Results for each time segment

Queueing Delay results: (10:45-11:00)

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	8.16	0.54	6.582	A	A
1	2	5.69	0.38	6.497	A	A
1	3	8.95	0.60	6.910	A	A
1	4	0.44	0.03	7.653	A	A
2	1	5.72	0.38	5.041	A	A
2	2	1.17	0.08	4.634	A	A

2	3	6.55	0.44	5.704	A	A
2	4	0.10	0.01	4.590	A	A

Queueing Delay results: (11:00-11:15)

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	11.40	0.76	7.667	A	A
1	2	7.70	0.51	7.329	A	A
1	3	12.48	0.83	8.073	A	A
1	4	0.56	0.04	8.139	A	A
2	1	7.50	0.50	5.516	A	A
2	2	1.48	0.10	4.868	A	A
2	3	8.74	0.58	6.318	A	A
2	4	0.12	0.01	4.770	A	A

Queueing Delay results: (11:15-11:30)

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	17.39	1.16	9.717	A	A
1	2	11.18	0.75	8.790	A	A
1	3	19.19	1.28	10.327	B	B
1	4	0.75	0.05	8.888	A	A
2	1	10.41	0.69	6.295	A	A
2	2	1.94	0.13	5.222	A	A
2	3	12.28	0.82	7.321	A	A
2	4	0.16	0.01	5.028	A	A

Queueing Delay results: (11:30-11:45)

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	18.39	1.23	9.835	A	A
1	2	11.67	0.78	8.847	A	A
1	3	20.33	1.36	10.441	B	B
1	4	0.77	0.05	8.905	A	A
2	1	10.75	0.72	6.314	A	A
2	2	1.98	0.13	5.225	A	A
2	3	12.78	0.85	7.373	A	A
2	4	0.16	0.01	5.037	A	A

Queueing Delay results: (11:45-12:00)

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	12.69	0.85	7.784	A	A
1	2	8.39	0.56	7.389	A	A
1	3	13.90	0.93	8.183	A	A
1	4	0.60	0.04	8.160	A	A
2	1	8.01	0.53	5.541	A	A
2	2	1.55	0.10	4.876	A	A
2	3	9.53	0.64	6.381	A	A
2	4	0.13	0.01	4.783	A	A

Queueing Delay results: (12:00-12:15)

Junction	Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
1	1	9.06	0.60	6.693	A	A

1	2	6.20	0.41	6.567	A	A
1	3	9.88	0.66	7.011	A	A
1	4	0.47	0.03	7.681	A	A
2	1	6.12	0.41	5.075	A	A
2	2	1.24	0.08	4.644	A	A
2	3	7.18	0.48	5.775	A	A
2	4	0.10	0.01	4.605	A	A