Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.2.1013

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Filename: A12 Junction 2 V1.j9
Path: X:\Projects\Projects\150000\152080 - Shenfield\MODELLING
Report generation date: 24/08/2023 19:06:09

Summary of junction performance

	AM					PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
	[Lane Simulation] - 2022 Base									
A - A12 (E)	D1	11.4	48.84		E	D2	1.3	7.43		A
B - Chelmsford Road		1.1	4.20		A		1.1	3.57		A
C - A12 (W)		1.2	5.92		A		1.7	7.72		A
D - Roman Road		1.6	5.12		A		0.8	3.41		A
	[Lane Simulation] - 2033 Base									
A - A12 (E)	D5	12.4	51.27		F	D6	1.8	9.05		A
B - Chelmsford Road		1.1	4.12		A		1.9	4.64		A
C - A12 (W)		1.2	6.00		A		2.1	9.05		A
D - Roman Road		1.7	5.14		A		0.9	3.88		A
	[Lane Simulation] - 2028 Base + Committed Development									
A - A12 (E)	D9	19.2	80.98		F	D10	1.8	8.26		A
B - Chelmsford Road		1.3	4.56		A		1.4	3.77		A
C - A12 (W)		1.3	6.15		A		1.5	7.44		A
D - Roman Road		1.7	5.52		A		0.8	3.71		A
	[Lane Simulation] - 2028 Base + Committed + Proposed									
A - A12 (E)	D11	28.9	107.52		F	D12	2.1	9.69		A
B - Chelmsford Road		1.8	5.28		A		1.4	3.94		A
C - A12 (W)		1.4	6.43		A		1.9	7.45		A
D - Roman Road		1.8	5.95		A		1.0	3.98		A
	[Lane Simulation] - 2033 Base + Committed Development									
A - A12 (E)	D13	19.5	81.33		F	D14	1.5	8.45		A
B - Chelmsford Road		1.3	4.57		A		1.1	3.78		A
C - A12 (W)		1.2	6.20		A		1.7	7.51		A
D - Roman Road		1.8	5.80		A		1.2	3.77		A
	[Lane Simulation] - 2033 Base + Proposed Development									
A - A12 (E)	D15	31.0	128.82		F	D16	1.7	8.57		A
B - Chelmsford Road		1.4	4.33		A		1.2	3.77		A
C - A12 (W)		1.4	6.09		A		1.9	7.37		A
D - Roman Road		1.9	5.70		A		0.8	3.88		A
	[Lane Simulation] - 2033 Base + Proposed + Committed									
A - A12 (E)	D17	33.0	130.33		F	D18	2.6	10.37		B
B - Chelmsford Road		1.9	5.36		A		1.5	3.89		A
C - A12 (W)		1.4	6.53		A		2.0	7.67		A
D - Roman Road		2.4	6.26		A		1.2	3.91		A

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

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Arm and junction delays are averages for all movements, including movements with zero delay.

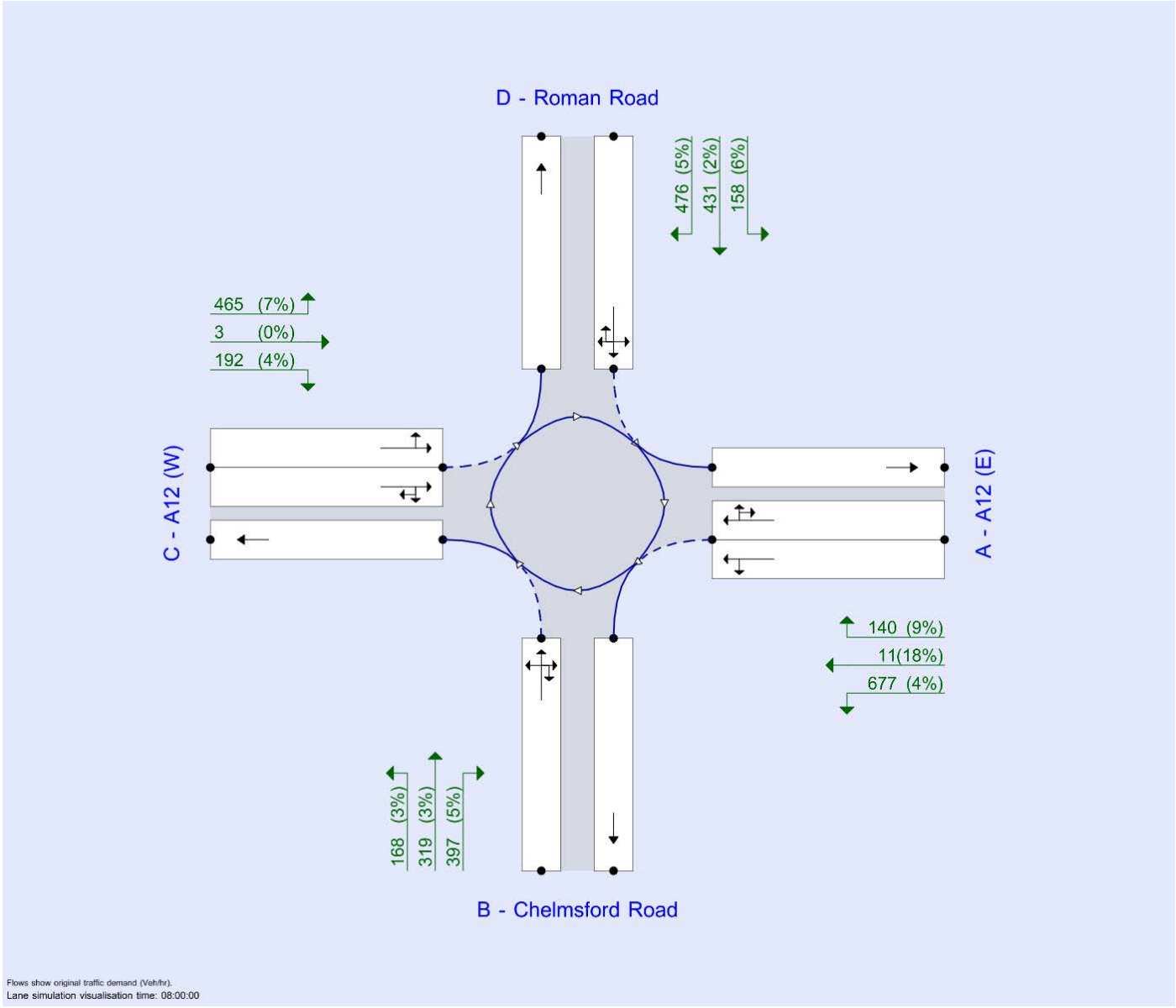
File summary

File Description

Title	
Location	
Site number	
Date	22/07/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	EUR\George.Magnisalis
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Lane Simulation options

Criteria type	Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Average animation capture interval (s)	Use quick response	Do flow sampling	Suppress automatic lane creation	Last run random seed	Last run number of trials	Last run time taken (s)
Delay	1.00	100000	100000	-1	3	1	60	✓			836408171	213	44.74

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2022 Base	AM	DIRECT	08:00	09:30	90	15	✓
D2	2022 Base	PM	DIRECT	17:00	18:30	90	15	✓
D3	2028 Base	AM	DIRECT	08:00	09:30	90	15	
D4	2028 Base	PM	DIRECT	17:00	18:30	90	15	
D5	2033 Base	AM	DIRECT	08:00	09:30	90	15	✓
D6	2033 Base	PM	DIRECT	17:00	18:30	90	15	✓
D7	2028 Base + Proposed Development	AM	DIRECT	08:00	09:30	90	15	
D8	2028 Base + Proposed Development	PM	DIRECT	17:00	18:30	90	15	
D9	2028 Base + Committed Development	AM	DIRECT	08:00	09:30	90	15	✓
D10	2028 Base + Committed Development	PM	DIRECT	17:00	18:30	90	15	✓
D11	2028 Base + Committed + Proposed	AM	DIRECT	08:00	09:30	90	15	✓
D12	2028 Base + Committed + Proposed	PM	DIRECT	17:00	18:30	90	15	✓
D13	2033 Base + Committed Development	AM	DIRECT	08:00	09:30	90	15	✓
D14	2033 Base + Committed Development	PM	DIRECT	17:00	18:30	90	15	✓
D15	2033 Base + Proposed Development	AM	DIRECT	08:00	09:30	90	15	✓
D16	2033 Base + Proposed Development	PM	DIRECT	17:00	18:30	90	15	✓
D17	2033 Base + Proposed + Committed	AM	DIRECT	08:00	09:30	90	15	✓
D18	2033 Base + Proposed + Committed	PM	DIRECT	17:00	18:30	90	15	✓

Analysis Set Details

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

2022 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	A - A12 (E) - Lane Simulation	Arm A: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Profile Type	D1 - 2022 Base, AM	The DIRECT profile type is intended to be used for demand that varies over time. You are using it with the 'Use O-D data' option, but your O-D data does not vary over time. Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Mountnessing Roundabout	Large Roundabout		A, B, C, D	15.61	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	A12 (E)	
B	Chelmsford Road	
C	A12 (W)	
D	Roman Road	

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
A - A12 (E)	6.10	6.60	2.1	47.0	112.0	23.0	
B - Chelmsford Road	3.20	7.20	20.5	17.1	112.0	27.0	
C - A12 (W)	6.70	8.50	16.4	95.9	112.0	7.5	
D - Roman Road	3.40	9.40	11.4	17.8	112.0	37.0	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A - A12 (E)	1137	88.10
B - Chelmsford Road	665	0.00
C - A12 (W)	897	86.00
D - Roman Road	619	0.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A - A12 (E)	0.860	2451
B - Chelmsford Road	0.848	2433
C - A12 (W)	1.101	3196
D - Roman Road	0.826	2380

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

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
A - A12 (E)	Percentage		105.00

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic considering secondary lanes (%)
A - A12 (E)	Evenly split	10.00

B - Chelmsford Road	Evenly split	10.00
C - A12 (W)	Evenly split	10.00
D - Roman Road	Evenly split	10.00

Lanes

Arm	Side	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Has bottleneck	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)	Signalised
A - A12 (E)	**Entry**	**1**	**1**	B, C		Infinity		0	99999	
			2	A, C, D		Infinity		0	99999	
	Exit	**1**	**1**			Infinity				
B - Chelmsford Road	**Entry**	**1**	**1**	A, B, C, D		Infinity		0	99999	
	Exit	**1**	**1**			Infinity				
C - A12 (W)	**Entry**	**1**	**1**	A, D		Infinity		0	99999	
			2	A, B, C		Infinity		0	99999	
	Exit	**1**	**1**			Infinity				
D - Roman Road	**Entry**	**1**	**1**	A, B, C, D		Infinity		0	99999	
	Exit	**1**	**1**			Infinity				

Entry Lane slope and intercept

Arm	Side	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A - A12 (E)	**Entry**	**1**	**1**	0.430	1225
			2	0.430	1225
B - Chelmsford Road	**Entry**	**1**	**1**	0.848	2433
C - A12 (W)	**Entry**	**1**	**1**	0.550	1598
			2	0.550	1598
D - Roman Road	**Entry**	**1**	**1**	0.826	2380

Summary of Entry Lane allowed movements

Arm	Lane Level	Lane	Destination arm			
			A12 (E)	Chelmsford Road	A12 (W)	Roman Road
A - A12 (E)	**1**	**1**		✓	✓	
		2	✓		✓	✓
B - Chelmsford Road	**1**	**1**	✓	✓	✓	✓
C - A12 (W)	**1**	**1**	✓			✓
		2	✓	✓	✓	
D - Roman Road	**1**	**1**	✓	✓	✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2022 Base	AM	DIRECT	08:00	09:30	90	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - A12 (E)		DIRECT	✓	100.000
B - Chelmsford Road		DIRECT	✓	100.000
C - A12 (W)		DIRECT	✓	100.000
D - Roman Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A12 (E)	B - Chelmsford Road	C - A12 (W)	D - Roman Road
From	A - A12 (E)	1	674	11	139
	B - Chelmsford Road	395	1	167	318
	C - A12 (W)	3	191	1	463
	D - Roman Road	157	429	474	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A12 (E)	B - Chelmsford Road	C - A12 (W)	D - Roman Road
From	A - A12 (E)	0	4	18	9
	B - Chelmsford Road	5	0	3	3
	C - A12 (W)	0	4	0	7
	D - Roman Road	6	2	5	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - A12 (E)	48.84	11.4	E	823	1235
B - Chelmsford Road	4.20	1.1	A	880	1320
C - A12 (W)	5.92	1.2	A	655	983
D - Roman Road	5.12	1.6	A	1065	1597

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	822	206	1093	819	832	553	0.0	9.6	33.553	D
B - Chelmsford Road	878	219	627	877	910	1286	0.0	1.0	3.964	A
C - A12 (W)	645	161	851	648	686	653	0.0	0.9	5.704	A
D - Roman Road	1066	267	581	1065	1101	917	0.0	1.5	4.961	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	828	207	1106	829	865	551	9.6	10.9	45.079	E
B - Chelmsford Road	867	217	639	868	910	1296	1.0	0.8	4.013	A
C - A12 (W)	657	164	854	658	692	653	0.9	0.9	5.817	A
D - Roman Road	1074	268	586	1071	1106	926	1.5	1.6	5.085	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	828	207	1107	836	866	554	10.9	10.6	47.714	E
B - Chelmsford Road	885	221	634	886	910	1310	0.8	1.1	4.049	A
C - A12 (W)	663	166	863	663	695	656	0.9	1.1	5.845	A
D - Roman Road	1066	267	593	1068	1108	933	1.6	1.4	4.926	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	821	205	1106	820	866	550	10.6	10.5	46.037	E
B - Chelmsford Road	884	221	628	882	917	1297	1.1	1.0	4.202	A
C - A12 (W)	654	163	856	651	692	655	1.1	1.1	5.726	A
D - Roman Road	1063	266	592	1064	1104	915	1.4	1.6	5.115	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	821	205	1094	819	865	556	10.5	11.1	48.838	E
B - Chelmsford Road	880	220	618	883	918	1296	1.0	0.8	4.093	A
C - A12 (W)	655	164	862	656	700	639	1.1	1.0	5.916	A
D - Roman Road	1053	263	598	1052	1100	920	1.6	1.4	4.972	A

09:15 - 09:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	821	205	1097	818	865	561	11.1	11.6	47.057	E
B - Chelmsford Road	886	221	628	885	922	1288	0.8	1.0	4.122	A
C - A12 (W)	657	164	863	658	701	650	1.0	1.1	5.847	A
D - Roman Road	1066	267	593	1065	1098	928	1.4	1.6	5.058	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	672	746	0.901	668	669	0.0	9.3	39.463	E
			2	A, C, D	150	708	0.212	151	163	0.0	0.2	6.761	A
	Exit	1	1		553			553	579	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	878	1797	0.489	877	910	0.0	1.0	3.964	A
	Exit	1	1		1286			1286	1299	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	458	1041	0.440	460	490	0.0	0.8	6.367	A
			2	A, B, C	187	1065	0.175	188	196	0.0	0.1	4.078	A
	Exit	1	1		653			653	683	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1066	1807	0.590	1065	1101	0.0	1.5	4.961	A
	Exit	1	1		917			917	968	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	672	739	0.909	672	699	9.3	10.6	53.635	F
			2	A, C, D	156	695	0.224	157	166	0.2	0.2	6.628	A
	Exit	1	1		551			551	583	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	867	1784	0.486	868	910	1.0	0.8	4.013	A
	Exit	1	1		1296			1296	1334	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	465	1033	0.450	466	493	0.8	0.7	6.534	A
			2	A, B, C	192	1060	0.181	192	199	0.1	0.2	4.098	A
	Exit	1	1		653			653	683	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1074	1803	0.596	1071	1106	1.5	1.6	5.085	A
	Exit	1	1		926			926	973	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	672	740	0.908	680	699	10.6	10.3	57.042	F
			2	A, C, D	156	706	0.221	156	167	0.2	0.3	6.696	A
	Exit	1	1		554			554	581	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	885	1793	0.493	886	910	0.8	1.1	4.049	A
	Exit	1	1		1310			1310	1338	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	467	1031	0.453	466	494	0.7	0.9	6.547	A
			2	A, B, C	196	1061	0.185	197	201	0.2	0.2	4.170	A
	Exit	1	1		656			656	686	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1066	1799	0.593	1068	1108	1.6	1.4	4.926	A
	Exit	1	1		933			933	974	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	671	740	0.907	669	701	10.3	10.3	54.839	F
			2	A, C, D	150	706	0.212	150	164	0.3	0.2	6.526	A
	Exit	1	1		550			550	585	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	884	1797	0.492	882	917	1.1	1.0	4.202	A
	Exit	1	1		1297			1297	1340	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	458	1033	0.443	456	493	0.9	0.9	6.376	A
			2	A, B, C	196	1062	0.185	196	199	0.2	0.3	4.165	A
	Exit	1	1		655			655	681	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1063	1798	0.591	1064	1104	1.4	1.6	5.115	A
	Exit	1	1		915			915	972	0.0	0.0	0.000	A

09:00 - 09:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	673	745	0.902	671	700	10.3	10.9	58.275	F
			2	A, C, D	148	704	0.211	149	166	0.2	0.2	6.624	A
	Exit	1	1		556			556	586	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	880	1814	0.485	883	918	1.0	0.8	4.093	A
	Exit	1	1		1296			1296	1340	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	458	1030	0.445	460	496	0.9	0.8	6.614	A
			2	A, B, C	197	1060	0.186	196	204	0.3	0.2	4.263	A
	Exit	1	1		639			639	680	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1053	1798	0.585	1052	1100	1.6	1.4	4.972	A
	Exit	1	1		920			920	978	0.0	0.0	0.000	A

09:15 - 09:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	667	741	0.898	665	698	10.9	11.3	56.508	F
			2	A, C, D	154	705	0.219	153	167	0.2	0.3	6.728	A
	Exit	1	1		561			561	589	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	886	1790	0.495	885	922	0.8	1.0	4.122	A
	Exit	1	1		1288			1288	1333	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	463	1027	0.451	464	499	0.8	0.8	6.489	A
			2	A, B, C	194	1054	0.184	194	202	0.2	0.3	4.316	A
	Exit	1	1		650			650	679	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1066	1797	0.594	1065	1098	1.4	1.6	5.058	A
	Exit	1	1		928			928	985	0.0	0.0	0.000	A

2022 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Profile Type	D2 - 2022 Base, PM	The DIRECT profile type is intended to be used for demand that varies over time. You are using it with the 'Use O-D data' option, but your O-D data does not vary over time. Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Mountnessing Roundabout	Large Roundabout		A, B, C, D	5.34	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A - A12 (E)	756	88.10
B - Chelmsford Road	501	0.00
C - A12 (W)	960	86.00
D - Roman Road	669	0.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2022 Base	PM	DIRECT	17:00	18:30	90	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - A12 (E)		DIRECT	✓	100.000
B - Chelmsford Road		DIRECT	✓	100.000
C - A12 (W)		DIRECT	✓	100.000
D - Roman Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A12 (E)	B - Chelmsford Road	C - A12 (W)	D - Roman Road
From	A - A12 (E)	0	490	2	110
	B - Chelmsford Road	477	1	123	360
	C - A12 (W)	2	171	0	563
	D - Roman Road	130	185	379	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A12 (E)	B - Chelmsford Road	C - A12 (W)	D - Roman Road
From	A - A12 (E)	0	1	0	1
	B - Chelmsford Road	2	0	2	0
	C - A12 (W)	0	5	0	4
	D - Roman Road	2	1	2	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - A12 (E)	7.43	1.3	A	601	901
B - Chelmsford Road	3.57	1.1	A	961	1441
C - A12 (W)	7.72	1.7	A	736	1104
D - Roman Road	3.41	0.8	A	692	1038

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	613	153	717	617	609	616	0.0	1.0	7.433	A
B - Chelmsford Road	966	242	480	966	973	854	0.0	1.0	3.439	A
C - A12 (W)	739	185	951	740	770	495	0.0	1.7	7.199	A
D - Roman Road	681	170	652	681	700	1039	0.0	0.6	3.407	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	586	146	736	590	595	605	1.0	1.1	7.099	A
B - Chelmsford Road	963	241	476	965	982	849	1.0	1.0	3.420	A
C - A12 (W)	732	183	945	735	770	497	1.7	1.2	7.400	A
D - Roman Road	686	171	654	687	707	1025	0.6	0.7	3.282	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	607	152	756	607	606	608	1.1	1.1	7.429	A
B - Chelmsford Road	960	240	506	961	974	857	1.0	0.8	3.425	A
C - A12 (W)	754	188	953	749	771	514	1.2	1.6	7.717	A
D - Roman Road	708	177	659	706	710	1044	0.7	0.7	3.375	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	607	152	734	608	607	598	1.1	1.1	7.159	A
B - Chelmsford Road	963	241	490	963	972	852	0.8	0.8	3.476	A
C - A12 (W)	738	185	941	737	770	512	1.6	1.4	7.208	A
D - Roman Road	689	172	646	686	706	1032	0.7	0.7	3.320	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	598	149	748	597	609	601	1.1	1.3	7.345	A
B - Chelmsford Road	943	236	488	945	974	856	0.8	0.9	3.510	A
C - A12 (W)	736	184	936	736	773	498	1.4	1.4	7.286	A
D - Roman Road	703	176	649	700	707	1023	0.7	0.8	3.401	A

18:15 - 18:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	595	149	725	595	604	609	1.3	1.1	7.191	A
B - Chelmsford Road	967	242	479	969	982	840	0.9	1.0	3.566	A
C - A12 (W)	718	180	949	720	761	499	1.4	1.2	6.918	A
D - Roman Road	684	171	647	686	699	1021	0.8	0.7	3.253	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	503	965	0.521	507	494	0.0	0.9	8.171	A
			2	A, C, D	110	958	0.115	110	114	0.0	0.1	4.228	A
	Exit	1	1		616			616	620	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	966	2020	0.478	966	973	0.0	1.0	3.439	A
	Exit	1	1		854			854	857	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	571	1024	0.558	570	587	0.0	1.5	8.100	A
			2	A, B, C	168	1017	0.165	170	182	0.0	0.2	4.245	A
	Exit	1	1		495			495	513	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	681	1794	0.380	681	700	0.0	0.6	3.407	A
	Exit	1	1		1039			1039	1062	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	483	955	0.506	486	487	0.9	1.0	7.733	A
			2	A, C, D	103	956	0.108	103	108	0.1	0.1	4.239	A
	Exit	1	1		605			605	619	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	963	2020	0.477	965	982	1.0	1.0	3.420	A
	Exit	1	1		849			849	857	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	558	1026	0.543	560	589	1.5	1.0	8.384	A
			2	A, B, C	174	1017	0.172	175	181	0.2	0.2	4.172	A
	Exit	1	1		497			497	516	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	686	1784	0.384	687	707	0.6	0.7	3.282	A
	Exit	1	1		1025			1025	1063	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	490	944	0.519	490	490	1.0	0.9	8.183	A
			2	A, C, D	116	945	0.123	117	116	0.1	0.1	4.240	A
	Exit	1	1		608			608	619	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	960	1996	0.481	961	974	1.0	0.8	3.425	A
	Exit	1	1		857			857	859	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	572	1026	0.558	568	588	1.0	1.4	8.765	A
			2	A, B, C	182	1026	0.178	182	182	0.2	0.2	4.326	A
	Exit	1	1		514			514	517	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	708	1786	0.397	706	710	0.7	0.7	3.375	A
	Exit	1	1		1044			1044	1064	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	504	951	0.530	505	498	0.9	1.0	7.789	A
			2	A, C, D	102	953	0.107	103	109	0.1	0.1	4.281	A
	Exit	1	1		598			598	618	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	963	2008	0.480	963	972	0.8	0.8	3.476	A
	Exit	1	1		852			852	860	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	567	1029	0.551	565	590	1.4	1.2	7.991	A
			2	A, B, C	171	1010	0.169	171	181	0.2	0.2	4.638	A
	Exit	1	1		512			512	518	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	689	1789	0.385	686	706	0.7	0.7	3.320	A
	Exit	1	1		1032			1032	1060	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	486	947	0.513	486	495	1.0	1.2	8.084	A
			2	A, C, D	112	950	0.118	111	114	0.1	0.2	4.127	A
	Exit	1	1		601			601	623	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	943	2012	0.469	945	974	0.8	0.9	3.510	A
	Exit	1	1		856			856	870	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	561	1035	0.542	561	589	1.2	1.2	8.185	A
			2	A, B, C	175	1027	0.170	175	185	0.2	0.2	4.372	A
	Exit	1	1		498			498	511	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	703	1788	0.393	700	707	0.7	0.8	3.401	A
	Exit	1	1		1023			1023	1060	0.0	0.0	0.000	A

18:15 - 18:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	490	960	0.510	491	497	1.2	1.0	7.825	A
			2	A, C, D	104	963	0.108	104	107	0.2	0.1	4.270	A
	Exit	1	1		609			609	627	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	967	2020	0.479	969	982	0.9	1.0	3.566	A
	Exit	1	1		840			840	858	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	551	1028	0.536	553	581	1.2	1.0	7.728	A
			2	A, B, C	167	1020	0.164	167	181	0.2	0.1	4.291	A
	Exit	1	1		499			499	512	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	684	1794	0.382	686	699	0.8	0.7	3.253	A
	Exit	1	1		1021			1021	1049	0.0	0.0	0.000	A

2033 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	A - A12 (E) - Lane Simulation	Arm A: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Profile Type	D5 - 2033 Base, AM	The DIRECT profile type is intended to be used for demand that varies over time. You are using it with the 'Use O-D data' option, but your O-D data does not vary over time. Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Mountnessing Roundabout	Large Roundabout		A, B, C, D	16.23	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A - A12 (E)	1142	88.10
B - Chelmsford Road	667	0.00
C - A12 (W)	899	86.00
D - Roman Road	621	0.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2033 Base	AM	DIRECT	08:00	09:30	90	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - A12 (E)		DIRECT	✓	100.000
B - Chelmsford Road		DIRECT	✓	100.000
C - A12 (W)		DIRECT	✓	100.000
D - Roman Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A12 (E)	B - Chelmsford Road	C - A12 (W)	D - Roman Road
From	A - A12 (E)	1	677	11	140
	B - Chelmsford Road	397	1	168	319
	C - A12 (W)	3	192	1	465
	D - Roman Road	158	431	476	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A12 (E)	B - Chelmsford Road	C - A12 (W)	D - Roman Road
From	A - A12 (E)	0	4	18	9
	B - Chelmsford Road	5	0	3	3
	C - A12 (W)	0	4	0	7
	D - Roman Road	6	2	5	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - A12 (E)	51.27	12.4	F	829	1243
B - Chelmsford Road	4.12	1.1	A	884	1326
C - A12 (W)	6.00	1.2	A	660	990
D - Roman Road	5.14	1.7	A	1059	1589

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	832	208	1101	815	838	553	0.0	9.7	31.962	D
B - Chelmsford Road	874	219	632	874	913	1285	0.0	1.0	4.013	A
C - A12 (W)	673	168	846	670	705	660	0.0	1.2	5.826	A
D - Roman Road	1063	266	594	1059	1099	922	0.0	1.6	5.084	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	820	205	1085	821	865	570	9.7	10.5	44.288	E
B - Chelmsford Road	898	224	625	900	929	1281	1.0	0.8	4.066	A
C - A12 (W)	659	165	865	659	703	661	1.2	1.1	5.827	A
D - Roman Road	1057	264	601	1054	1097	922	1.6	1.7	5.110	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	832	208	1107	838	874	554	10.5	10.0	46.256	E
B - Chelmsford Road	882	221	638	884	920	1307	0.8	1.0	4.119	A
C - A12 (W)	664	166	860	664	699	661	1.1	1.0	5.825	A
D - Roman Road	1066	266	597	1064	1104	928	1.7	1.7	5.061	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	833	208	1097	829	859	553	10.0	11.4	46.853	E
B - Chelmsford Road	872	218	625	876	920	1302	1.0	0.8	4.038	A
C - A12 (W)	666	166	850	666	701	651	1.0	1.0	5.856	A
D - Roman Road	1062	266	592	1059	1104	924	1.7	1.7	5.074	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	840	210	1083	834	868	557	11.4	12.5	51.274	F
B - Chelmsford Road	889	222	620	889	926	1296	0.8	1.2	4.058	A
C - A12 (W)	649	162	866	649	696	643	1.0	1.0	5.812	A
D - Roman Road	1042	261	594	1046	1106	920	1.7	1.4	5.145	A

09:15 - 09:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	822	205	1095	829	876	567	12.5	10.7	48.215	E
B - Chelmsford Road	887	222	628	885	924	1296	1.2	1.1	4.064	A
C - A12 (W)	651	163	854	653	697	659	1.0	1.0	6.003	A
D - Roman Road	1063	266	597	1064	1104	909	1.4	1.5	4.982	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	681	742	0.918	665	670	0.0	9.5	37.688	E
			2	A, C, D	151	702	0.216	150	169	0.0	0.3	6.646	A
	Exit	1	1		553			553	584	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	874	1789	0.489	874	913	0.0	1.0	4.013	A
	Exit	1	1		1285			1285	1306	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	469	1037	0.453	467	499	0.0	1.0	6.488	A
			2	A, B, C	204	1064	0.191	203	206	0.0	0.2	4.256	A
	Exit	1	1		660			660	686	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1063	1793	0.593	1059	1099	0.0	1.6	5.084	A
	Exit	1	1		922			922	979	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	674	748	0.900	676	702	9.5	10.2	52.563	F
			2	A, C, D	146	707	0.206	146	163	0.3	0.3	6.452	A
	Exit	1	1		570			570	591	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	898	1803	0.498	900	929	1.0	0.8	4.066	A
	Exit	1	1		1281			1281	1332	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	470	1028	0.457	468	502	1.0	0.9	6.521	A
			2	A, B, C	190	1060	0.179	191	201	0.2	0.2	4.152	A
	Exit	1	1		661			661	686	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1057	1788	0.591	1054	1097	1.6	1.7	5.110	A
	Exit	1	1		922			922	984	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	680	738	0.920	686	706	10.2	9.8	55.189	F
			2	A, C, D	152	698	0.217	153	169	0.3	0.2	6.758	A
	Exit	1	1		554			554	587	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	882	1786	0.494	884	920	0.8	1.0	4.119	A
	Exit	1	1		1307			1307	1346	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	469	1031	0.454	469	494	0.9	0.8	6.523	A
			2	A, B, C	196	1051	0.186	196	205	0.2	0.2	4.185	A
	Exit	1	1		661			661	687	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1066	1791	0.595	1064	1104	1.7	1.7	5.061	A
	Exit	1	1		928			928	976	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	682	744	0.914	678	697	9.8	11.1	55.716	F
			2	A, C, D	151	709	0.213	152	163	0.2	0.3	6.826	A
	Exit	1	1		553			553	586	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	872	1798	0.485	876	920	1.0	0.8	4.038	A
	Exit	1	1		1302			1302	1333	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	468	1035	0.453	469	499	0.8	0.8	6.574	A
			2	A, B, C	197	1063	0.185	197	202	0.2	0.2	4.133	A
	Exit	1	1		651			651	689	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1062	1793	0.593	1059	1104	1.7	1.7	5.074	A
	Exit	1	1		924			924	976	0.0	0.0	0.000	A

09:00 - 09:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	686	750	0.914	679	704	11.1	12.3	61.097	F
			2	A, C, D	154	721	0.213	154	164	0.3	0.2	6.590	A
	Exit	1	1		557			557	590	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	889	1805	0.493	889	926	0.8	1.2	4.058	A
	Exit	1	1		1296			1296	1343	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	456	1028	0.443	456	493	0.8	0.8	6.497	A
			2	A, B, C	193	1053	0.183	192	203	0.2	0.2	4.192	A
	Exit	1	1		643			643	688	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1042	1795	0.581	1046	1106	1.7	1.4	5.145	A
	Exit	1	1		920			920	974	0.0	0.0	0.000	A

09:15 - 09:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	671	747	0.899	677	708	12.3	10.4	57.923	F
			2	A, C, D	150	712	0.211	152	168	0.2	0.2	6.751	A
	Exit	1	1		567			567	591	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	887	1796	0.494	885	924	1.2	1.1	4.064	A
	Exit	1	1		1296			1296	1343	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	458	1028	0.445	459	495	0.8	0.8	6.800	A
			2	A, B, C	193	1069	0.181	193	201	0.2	0.2	4.103	A
	Exit	1	1		659			659	687	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1063	1794	0.593	1064	1104	1.4	1.5	4.982	A
	Exit	1	1		909			909	980	0.0	0.0	0.000	A

2033 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Profile Type	D6 - 2033 Base, PM	The DIRECT profile type is intended to be used for demand that varies over time. You are using it with the 'Use O-D data' option, but your O-D data does not vary over time. Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Mountnessing Roundabout	Large Roundabout		A, B, C, D	6.42	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A - A12 (E)	760	88.10
B - Chelmsford Road	504	0.00
C - A12 (W)	965	86.00
D - Roman Road	672	0.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2033 Base	PM	DIRECT	17:00	18:30	90	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - A12 (E)		DIRECT	✓	100.000
B - Chelmsford Road		DIRECT	✓	100.000
C - A12 (W)		DIRECT	✓	100.000
D - Roman Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A12 (E)	B - Chelmsford Road	C - A12 (W)	D - Roman Road
From	A - A12 (E)	0	492	2	111
	B - Chelmsford Road	479	1	124	362
	C - A12 (W)	2	172	0	566
	D - Roman Road	131	186	381	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A12 (E)	B - Chelmsford Road	C - A12 (W)	D - Roman Road
From	A - A12 (E)	0	9	2	3
	B - Chelmsford Road	20	0	9	0
	C - A12 (W)	1	2	0	8
	D - Roman Road	1	0	7	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - A12 (E)	9.05	1.8	A	598	897
B - Chelmsford Road	4.64	1.9	A	958	1437
C - A12 (W)	9.05	2.1	A	738	1107
D - Roman Road	3.88	0.9	A	706	1059

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	589	147	740	591	648	621	0.0	1.7	8.878	A
B - Chelmsford Road	959	240	504	957	1066	827	0.0	1.1	4.366	A
C - A12 (W)	731	183	953	730	782	508	0.0	2.1	8.469	A
D - Roman Road	712	178	649	712	734	1034	0.0	0.7	3.838	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	607	152	744	607	657	606	1.7	1.6	8.865	A
B - Chelmsford Road	965	241	499	973	1076	852	1.1	0.9	4.537	A
C - A12 (W)	740	185	963	742	783	509	2.1	1.7	8.722	A
D - Roman Road	700	175	652	699	731	1053	0.7	0.7	3.759	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	601	150	760	601	647	610	1.6	1.3	8.820	A
B - Chelmsford Road	960	240	498	957	1070	863	0.9	1.5	4.590	A
C - A12 (W)	741	185	947	743	775	508	1.7	1.8	8.390	A
D - Roman Road	710	178	661	709	738	1030	0.7	0.9	3.884	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	594	149	751	590	653	606	1.3	1.7	8.991	A
B - Chelmsford Road	959	240	499	958	1082	842	1.5	1.3	4.564	A
C - A12 (W)	750	187	943	750	795	513	1.8	1.9	9.045	A
D - Roman Road	702	175	649	708	725	1045	0.9	0.4	3.718	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	609	152	749	607	656	608	1.7	1.6	9.053	A
B - Chelmsford Road	955	239	508	949	1079	849	1.3	1.6	4.637	A
C - A12 (W)	739	185	944	737	789	513	1.9	1.7	9.010	A
D - Roman Road	713	178	643	715	727	1038	0.4	0.7	3.739	A

18:15 - 18:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	589	147	750	593	650	596	1.6	1.5	8.686	A
B - Chelmsford Road	953	238	499	943	1058	843	1.6	1.8	4.229	A
C - A12 (W)	731	183	937	731	784	505	1.7	1.7	8.974	A
D - Roman Road	700	175	647	700	731	1021	0.7	0.7	3.662	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	475	874	0.543	476	530	0.0	1.6	9.898	A
			2	A, C, D	114	925	0.123	116	118	0.0	0.1	4.473	A
	Exit	1	1		621			621	715	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	959	1807	0.530	957	1066	0.0	1.1	4.366	A
	Exit	1	1		827			827	891	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	565	947	0.596	564	607	0.0	1.9	9.690	A
			2	A, B, C	165	1003	0.165	166	175	0.0	0.2	4.425	A
	Exit	1	1		508			508	543	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	712	1687	0.422	712	734	0.0	0.7	3.838	A
	Exit	1	1		1034			1034	1081	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	494	876	0.564	495	541	1.6	1.4	9.886	A
			2	A, C, D	113	925	0.122	112	116	0.1	0.2	4.411	A
	Exit	1	1		606			606	707	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	965	1805	0.534	973	1076	1.1	0.9	4.537	A
	Exit	1	1		852			852	907	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	569	939	0.605	569	607	1.9	1.5	10.043	B
			2	A, B, C	171	995	0.172	173	176	0.2	0.1	4.433	A
	Exit	1	1		509			509	546	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	700	1686	0.415	699	731	0.7	0.7	3.759	A
	Exit	1	1		1053			1053	1088	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	490	865	0.566	491	533	1.4	1.1	9.791	A
			2	A, C, D	110	909	0.122	110	114	0.2	0.1	4.524	A
	Exit	1	1		610			610	708	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	960	1796	0.533	957	1070	0.9	1.5	4.590	A
	Exit	1	1		863			863	896	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	565	944	0.597	566	599	1.5	1.6	9.602	A
			2	A, B, C	177	1003	0.176	177	177	0.1	0.2	4.513	A
	Exit	1	1		508			508	555	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	710	1674	0.424	709	738	0.7	0.9	3.884	A
	Exit	1	1		1030			1030	1071	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	481	873	0.551	477	536	1.1	1.5	10.031	B
			2	A, C, D	113	933	0.122	113	117	0.1	0.2	4.482	A
	Exit	1	1		606			606	707	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	959	1818	0.527	958	1082	1.5	1.3	4.564	A
	Exit	1	1		842			842	899	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	572	954	0.599	572	616	1.6	1.7	10.454	B
			2	A, B, C	178	1010	0.176	178	179	0.2	0.2	4.461	A
	Exit	1	1		513			513	549	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	702	1703	0.412	708	725	0.9	0.4	3.718	A
	Exit	1	1		1045			1045	1100	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	494	872	0.566	491	536	1.5	1.5	10.195	B
			2	A, C, D	115	924	0.124	116	120	0.2	0.1	4.218	A
	Exit	1	1		608			608	710	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	955	1794	0.532	949	1079	1.3	1.6	4.637	A
	Exit	1	1		849			849	901	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	566	946	0.598	564	609	1.7	1.5	10.444	B
			2	A, B, C	172	1003	0.172	173	180	0.2	0.2	4.425	A
	Exit	1	1		513			513	545	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	713	1692	0.422	715	727	0.4	0.7	3.739	A
	Exit	1	1		1038			1038	1096	0.0	0.0	0.000	A

18:15 - 18:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	476	872	0.546	480	532	1.5	1.3	9.681	A
			2	A, C, D	113	919	0.123	113	117	0.1	0.1	4.456	A
	Exit	1	1		596			596	700	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	953	1809	0.527	943	1058	1.6	1.8	4.229	A
	Exit	1	1		843			843	902	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	557	952	0.585	557	605	1.5	1.5	10.388	B
			2	A, B, C	174	1014	0.172	173	179	0.2	0.2	4.457	A
	Exit	1	1		505			505	542	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	700	1692	0.414	700	731	0.7	0.7	3.662	A
	Exit	1	1		1021			1021	1079	0.0	0.0	0.000	A

2028 Base + Committed Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	A - A12 (E) - Lane Simulation	Arm A: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Profile Type	D9 - 2028 Base + Committed Development, AM	The DIRECT profile type is intended to be used for demand that varies over time. You are using it with the 'Use O-D data' option, but your O-D data does not vary over time. Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Mountnessing Roundabout	Large Roundabout		A, B, C, D	23.06	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A - A12 (E)	1142	88.10
B - Chelmsford Road	667	0.00
C - A12 (W)	899	86.00
D - Roman Road	621	0.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D9	2028 Base + Committed Development	AM	DIRECT	08:00	09:30	90	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - A12 (E)		DIRECT	✓	100.000
B - Chelmsford Road		DIRECT	✓	100.000
C - A12 (W)		DIRECT	✓	100.000
D - Roman Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A12 (E)	B - Chelmsford Road	C - A12 (W)	D - Roman Road
From	A - A12 (E)	1	686	11	139
	B - Chelmsford Road	416	1	227	343
	C - A12 (W)	3	226	1	463
	D - Roman Road	157	444	474	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A12 (E)	B - Chelmsford Road	C - A12 (W)	D - Roman Road
From	A - A12 (E)	0	4	18	9
	B - Chelmsford Road	5	0	2	3
	C - A12 (W)	0	4	0	7
	D - Roman Road	6	2	5	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - A12 (E)	80.98	19.2	F	835	1253
B - Chelmsford Road	4.56	1.3	A	984	1476
C - A12 (W)	6.15	1.3	A	690	1034
D - Roman Road	5.52	1.7	A	1077	1615

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	850	213	1144	819	833	572	0.0	12.2	37.424	E
B - Chelmsford Road	984	246	620	985	1013	1343	0.0	1.1	4.397	A
C - A12 (W)	694	173	901	690	729	704	0.0	1.2	6.011	A
D - Roman Road	1074	269	645	1071	1113	947	0.0	1.6	5.504	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	830	207	1138	833	869	577	12.2	14.5	61.192	F
B - Chelmsford Road	987	247	628	990	1019	1343	1.1	1.1	4.565	A
C - A12 (W)	692	173	900	691	738	718	1.2	1.3	6.139	A
D - Roman Road	1066	267	648	1067	1119	944	1.6	1.6	5.458	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	831	208	1149	836	875	577	14.5	15.9	69.086	F
B - Chelmsford Road	981	245	629	980	1022	1356	1.1	1.3	4.504	A
C - A12 (W)	690	172	887	689	734	723	1.3	1.2	6.147	A
D - Roman Road	1081	270	645	1081	1122	930	1.6	1.5	5.336	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	833	208	1141	829	870	576	15.9	17.7	73.985	F
B - Chelmsford Road	985	246	622	983	1018	1348	1.3	1.3	4.385	A
C - A12 (W)	685	171	895	685	729	710	1.2	1.1	6.150	A
D - Roman Road	1076	269	640	1077	1117	940	1.5	1.6	5.520	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	838	209	1150	829	869	579	17.7	19.4	80.978	F
B - Chelmsford Road	980	245	631	979	1021	1347	1.3	1.2	4.558	A
C - A12 (W)	688	172	901	686	735	709	1.1	1.2	6.069	A
D - Roman Road	1077	269	651	1078	1121	936	1.6	1.6	5.520	A

09:15 - 09:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	828	207	1155	828	876	577	19.4	19.1	77.227	F
B - Chelmsford Road	985	246	627	981	1016	1356	1.2	1.3	4.448	A
C - A12 (W)	690	172	898	692	730	710	1.2	1.0	6.026	A
D - Roman Road	1087	272	642	1089	1124	947	1.6	1.5	5.329	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	698	720	0.967	667	669	0.0	11.9	44.121	E
			2	A, C, D	152	687	0.222	152	164	0.0	0.3	6.682	A
	Exit	1	1		572			572	602	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	984	1814	0.543	985	1013	0.0	1.1	4.397	A
	Exit	1	1		1343			1343	1354	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	462	1010	0.458	459	491	0.0	1.0	6.757	A
			2	A, B, C	231	1035	0.223	231	238	0.0	0.3	4.502	A
	Exit	1	1		704			704	739	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1074	1755	0.612	1071	1113	0.0	1.6	5.504	A
	Exit	1	1		947			947	992	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	677	725	0.935	680	702	11.9	14.1	73.295	F
			2	A, C, D	153	687	0.223	153	167	0.3	0.3	6.824	A
	Exit	1	1		577			577	606	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	987	1803	0.548	990	1019	1.1	1.1	4.565	A
	Exit	1	1		1343			1343	1392	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	465	1012	0.460	465	498	1.0	1.0	6.934	A
			2	A, B, C	227	1036	0.219	227	240	0.3	0.3	4.530	A
	Exit	1	1		718			718	750	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1066	1749	0.610	1067	1119	1.6	1.6	5.458	A
	Exit	1	1		944			944	998	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	682	721	0.944	687	709	14.1	15.7	82.794	F
			2	A, C, D	149	684	0.218	150	166	0.3	0.3	6.686	A
	Exit	1	1		577			577	608	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	981	1808	0.543	980	1022	1.1	1.3	4.504	A
	Exit	1	1		1356			1356	1399	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	461	1012	0.455	459	496	1.0	1.0	6.925	A
			2	A, B, C	229	1047	0.218	230	238	0.3	0.2	4.573	A
	Exit	1	1		723			723	748	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1081	1757	0.615	1081	1122	1.6	1.5	5.336	A
	Exit	1	1		930			930	997	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	683	727	0.943	679	708	15.7	17.4	88.338	F
			2	A, C, D	149	686	0.218	150	162	0.3	0.3	6.996	A
	Exit	1	1		576			576	608	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	985	1811	0.544	983	1018	1.3	1.3	4.385	A
	Exit	1	1		1348			1348	1392	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	457	1010	0.453	458	496	1.0	0.8	6.985	A
			2	A, B, C	228	1040	0.219	227	233	0.2	0.3	4.438	A
	Exit	1	1		710			710	738	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1076	1758	0.612	1077	1117	1.5	1.6	5.520	A
	Exit	1	1		940			940	997	0.0	0.0	0.000	A

09:00 - 09:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	685	721	0.949	676	704	17.4	19.1	97.365	F
			2	A, C, D	153	682	0.223	153	165	0.3	0.2	6.768	A
	Exit	1	1		579			579	608	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	980	1802	0.544	979	1021	1.3	1.2	4.558	A
	Exit	1	1		1347			1347	1396	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	457	1009	0.453	456	493	0.8	0.9	6.841	A
			2	A, B, C	230	1042	0.221	230	242	0.3	0.2	4.537	A
	Exit	1	1		709			709	747	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1077	1754	0.614	1078	1121	1.6	1.6	5.520	A
	Exit	1	1		936			936	994	0.0	0.0	0.000	A

09:15 - 09:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	678	717	0.947	678	714	19.1	18.8	93.376	F
			2	A, C, D	150	685	0.218	150	162	0.2	0.3	6.653	A
	Exit	1	1		577			577	601	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	985	1803	0.546	981	1016	1.2	1.3	4.448	A
	Exit	1	1		1356			1356	1403	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	461	1009	0.457	464	494	0.9	0.7	6.821	A
			2	A, B, C	228	1046	0.219	228	235	0.2	0.3	4.409	A
	Exit	1	1		710			710	746	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1087	1758	0.618	1089	1124	1.6	1.5	5.329	A
	Exit	1	1		947			947	996	0.0	0.0	0.000	A

2028 Base + Committed Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Profile Type	D10 - 2028 Base + Committed Development, PM	The DIRECT profile type is intended to be used for demand that varies over time. You are using it with the 'Use O-D data' option, but your O-D data does not vary over time. Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Mountnessing Roundabout	Large Roundabout		A, B, C, D	5.57	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A - A12 (E)	760	88.10
B - Chelmsford Road	504	0.00
C - A12 (W)	965	86.00
D - Roman Road	672	0.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D10	2028 Base + Committed Development	PM	DIRECT	17:00	18:30	90	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - A12 (E)		DIRECT	✓	100.000
B - Chelmsford Road		DIRECT	✓	100.000
C - A12 (W)		DIRECT	✓	100.000
D - Roman Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A12 (E)	B - Chelmsford Road	C - A12 (W)	D - Roman Road
From	A - A12 (E)	0	509	2	110
	B - Chelmsford Road	489	1	155	374
	C - A12 (W)	2	225	0	563
	D - Roman Road	130	208	379	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A12 (E)	B - Chelmsford Road	C - A12 (W)	D - Roman Road
From	A - A12 (E)	0	1	0	1
	B - Chelmsford Road	2	0	1	0
	C - A12 (W)	0	4	0	4
	D - Roman Road	2	1	2	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - A12 (E)	8.26	1.8	A	617	926
B - Chelmsford Road	3.77	1.4	A	1015	1523
C - A12 (W)	7.44	1.5	A	789	1184
D - Roman Road	3.71	0.8	A	715	1073

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	611	153	808	610	621	624	0.0	1.3	7.701	A
B - Chelmsford Road	1025	256	488	1022	1038	930	0.0	1.3	3.769	A
C - A12 (W)	788	197	978	791	814	533	0.0	1.4	7.201	A
D - Roman Road	713	178	720	713	728	1049	0.0	0.7	3.571	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	623	156	813	626	630	624	1.3	1.3	8.257	A
B - Chelmsford Road	1025	256	486	1024	1029	953	1.3	1.3	3.555	A
C - A12 (W)	784	196	973	787	831	537	1.4	1.3	6.957	A
D - Roman Road	719	180	718	719	735	1042	0.7	0.7	3.714	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	620	155	816	627	629	625	1.3	1.1	8.103	A
B - Chelmsford Road	1021	255	494	1016	1025	949	1.3	1.4	3.660	A
C - A12 (W)	793	198	972	796	825	538	1.3	1.5	7.305	A
D - Roman Road	717	179	725	716	734	1043	0.7	0.6	3.657	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	609	152	807	602	617	607	1.1	1.8	8.205	A
B - Chelmsford Road	1007	252	485	1006	1033	924	1.4	1.0	3.699	A
C - A12 (W)	788	197	959	792	825	531	1.5	1.3	7.124	A
D - Roman Road	708	177	705	709	728	1046	0.6	0.6	3.560	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	624	156	826	625	628	610	1.8	1.4	8.186	A
B - Chelmsford Road	1014	254	495	1012	1034	956	1.0	1.3	3.660	A
C - A12 (W)	800	200	973	804	823	533	1.3	1.5	7.441	A
D - Roman Road	714	179	719	718	730	1059	0.6	0.6	3.513	A

18:15 - 18:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	617	154	806	613	623	609	1.4	1.5	7.819	A
B - Chelmsford Road	1000	250	486	1001	1021	934	1.3	0.9	3.566	A
C - A12 (W)	783	196	946	787	817	540	1.5	1.3	6.987	A
D - Roman Road	720	180	696	719	722	1037	0.6	0.7	3.502	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	502	920	0.546	499	508	0.0	1.3	8.427	A
			2	A, C, D	109	920	0.119	110	114	0.0	0.0	4.420	A
	Exit	1	1		624			624	641	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1025	2014	0.509	1022	1038	0.0	1.3	3.769	A
	Exit	1	1		930			930	951	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	561	1010	0.555	564	580	0.0	1.2	8.144	A
			2	A, B, C	226	1018	0.222	227	234	0.0	0.2	4.863	A
	Exit	1	1		533			533	539	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	713	1737	0.411	713	728	0.0	0.7	3.571	A
	Exit	1	1		1049			1049	1071	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	512	918	0.558	515	520	1.3	1.2	9.074	A
			2	A, C, D	111	917	0.121	111	110	0.0	0.1	4.412	A
	Exit	1	1		624			624	642	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1025	2018	0.508	1024	1029	1.3	1.3	3.555	A
	Exit	1	1		953			953	972	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	553	1016	0.544	555	589	1.2	1.1	7.884	A
			2	A, B, C	231	1023	0.226	232	242	0.2	0.2	4.712	A
	Exit	1	1		537			537	544	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	719	1743	0.412	719	735	0.7	0.7	3.714	A
	Exit	1	1		1042			1042	1068	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	509	917	0.555	516	516	1.2	0.9	8.868	A
			2	A, C, D	112	916	0.122	111	112	0.1	0.2	4.591	A
	Exit	1	1		625			625	635	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1021	2008	0.508	1016	1025	1.3	1.4	3.660	A
	Exit	1	1		949			949	963	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	565	1019	0.554	568	588	1.1	1.2	8.352	A
			2	A, B, C	228	1023	0.223	228	236	0.2	0.3	4.698	A
	Exit	1	1		538			538	550	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	717	1732	0.414	716	734	0.7	0.6	3.657	A
	Exit	1	1		1043			1043	1064	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	498	918	0.542	492	506	0.9	1.6	9.051	A
			2	A, C, D	111	918	0.121	110	111	0.2	0.2	4.319	A
	Exit	1	1		607			607	629	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1007	2016	0.500	1006	1033	1.4	1.0	3.699	A
	Exit	1	1		924			924	954	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	561	1025	0.547	563	585	1.2	1.1	8.071	A
			2	A, B, C	227	1017	0.224	229	240	0.3	0.2	4.799	A
	Exit	1	1		531			531	546	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	708	1742	0.406	709	728	0.6	0.6	3.560	A
	Exit	1	1		1046			1046	1073	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	511	909	0.562	511	515	1.6	1.3	8.972	A
			2	A, C, D	113	907	0.125	114	113	0.2	0.1	4.614	A
	Exit	1	1		610			610	637	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1014	2006	0.506	1012	1034	1.0	1.3	3.660	A
	Exit	1	1		956			956	966	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	568	1012	0.561	571	585	1.1	1.2	8.615	A
			2	A, B, C	233	1011	0.230	233	238	0.2	0.2	4.552	A
	Exit	1	1		533			533	540	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	714	1734	0.412	718	730	0.6	0.6	3.513	A
	Exit	1	1		1059			1059	1072	0.0	0.0	0.000	A

18:15 - 18:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	511	919	0.556	508	514	1.3	1.3	8.513	A
			2	A, C, D	106	921	0.115	106	110	0.1	0.2	4.593	A
	Exit	1	1		609			609	625	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1000	2020	0.495	1001	1021	1.3	0.9	3.566	A
	Exit	1	1		934			934	951	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	560	1032	0.542	564	586	1.2	1.0	8.044	A
			2	A, B, C	223	1034	0.215	222	231	0.2	0.3	4.326	A
	Exit	1	1		540			540	539	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	720	1755	0.410	719	722	0.6	0.7	3.502	A
	Exit	1	1		1037			1037	1068	0.0	0.0	0.000	A

2028 Base + Committed + Proposed, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	A - A12 (E) - Lane Simulation	Arm A: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Profile Type	D11 - 2028 Base + Committed + Proposed, AM	The DIRECT profile type is intended to be used for demand that varies over time. You are using it with the 'Use O-D data' option, but your O-D data does not vary over time. Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Mountnessing Roundabout	Large Roundabout		A, B, C, D	29.02	D

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A - A12 (E)	1142	88.10
B - Chelmsford Road	667	0.00
C - A12 (W)	899	86.00
D - Roman Road	621	0.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D11	2028 Base + Committed + Proposed	AM	DIRECT	08:00	09:30	90	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - A12 (E)		DIRECT	✓	100.000
B - Chelmsford Road		DIRECT	✓	100.000
C - A12 (W)		DIRECT	✓	100.000
D - Roman Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A12 (E)	B - Chelmsford Road	C - A12 (W)	D - Roman Road
From	A - A12 (E)	1	693	11	139
	B - Chelmsford Road	435	1	283	371
	C - A12 (W)	3	245	1	463
	D - Roman Road	157	457	474	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A12 (E)	B - Chelmsford Road	C - A12 (W)	D - Roman Road
From	A - A12 (E)	0	4	18	9
	B - Chelmsford Road	5	0	2	3
	C - A12 (W)	0	3	0	7
	D - Roman Road	6	2	5	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - A12 (E)	107.52	28.9	F	847	1270
B - Chelmsford Road	5.28	1.8	A	1092	1638
C - A12 (W)	6.43	1.4	A	709	1064
D - Roman Road	5.95	1.8	A	1088	1632

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	849	212	1170	818	835	591	0.0	13.8	42.508	E
B - Chelmsford Road	1083	271	626	1083	1123	1362	0.0	1.6	5.106	A
C - A12 (W)	711	178	944	708	749	765	0.0	1.3	6.260	A
D - Roman Road	1079	270	683	1078	1117	970	0.0	1.5	5.747	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	845	211	1183	829	870	597	13.8	18.3	70.540	F
B - Chelmsford Road	1098	274	629	1094	1132	1383	1.6	1.8	5.203	A
C - A12 (W)	700	175	951	701	748	773	1.3	1.1	6.258	A
D - Roman Road	1085	271	693	1086	1130	959	1.5	1.5	5.696	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	844	211	1187	832	877	601	18.3	21.7	88.004	F
B - Chelmsford Road	1090	273	633	1092	1130	1386	1.8	1.6	5.142	A
C - A12 (W)	710	177	949	709	746	777	1.1	1.3	6.362	A
D - Roman Road	1098	275	687	1100	1134	970	1.5	1.8	5.922	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	842	211	1181	839	883	595	21.7	23.1	97.481	F
B - Chelmsford Road	1102	275	632	1101	1131	1388	1.6	1.5	5.203	A
C - A12 (W)	716	179	956	716	752	777	1.3	1.4	6.434	A
D - Roman Road	1083	271	690	1086	1130	982	1.8	1.8	5.946	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	844	211	1188	829	875	598	23.1	25.8	107.257	F
B - Chelmsford Road	1094	274	630	1095	1122	1387	1.5	1.6	5.134	A
C - A12 (W)	711	178	951	711	748	774	1.4	1.2	6.196	A
D - Roman Road	1093	273	691	1095	1130	971	1.8	1.7	5.871	A

09:15 - 09:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	854	213	1181	845	874	598	25.8	29.0	107.524	F
B - Chelmsford Road	1087	272	628	1088	1131	1397	1.6	1.5	5.285	A
C - A12 (W)	710	177	947	712	753	769	1.2	1.1	6.326	A
D - Roman Road	1091	273	688	1091	1135	971	1.7	1.6	5.917	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	697	710	0.983	666	670	0.0	13.5	50.274	F
			2	A, C, D	152	674	0.225	152	165	0.0	0.3	6.890	A
	Exit	1	1		591			591	627	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1083	1806	0.599	1083	1123	0.0	1.6	5.106	A
	Exit	1	1		1362			1362	1386	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	464	986	0.471	462	493	0.0	1.0	7.095	A
			2	A, B, C	247	1022	0.242	247	256	0.0	0.3	4.702	A
	Exit	1	1		765			765	787	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1079	1719	0.627	1078	1117	0.0	1.5	5.747	A
	Exit	1	1		970			970	1024	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	696	706	0.987	679	706	13.5	18.0	84.156	F
			2	A, C, D	149	672	0.222	150	164	0.3	0.3	7.086	A
	Exit	1	1		597			597	628	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1098	1799	0.610	1094	1132	1.6	1.8	5.203	A
	Exit	1	1		1383			1383	1425	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	450	978	0.460	451	493	1.0	0.8	7.128	A
			2	A, B, C	249	1015	0.245	250	256	0.3	0.3	4.648	A
	Exit	1	1		773			773	803	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1085	1714	0.632	1086	1130	1.5	1.5	5.696	A
	Exit	1	1		959			959	1025	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	696	703	0.991	683	712	18.0	21.5	105.347	F
			2	A, C, D	148	662	0.224	149	165	0.3	0.2	7.200	A
	Exit	1	1		601			601	626	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1090	1803	0.604	1092	1130	1.8	1.6	5.142	A
	Exit	1	1		1386			1386	1431	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	460	980	0.469	459	490	0.8	0.9	7.244	A
			2	A, B, C	250	1019	0.245	250	256	0.3	0.3	4.734	A
	Exit	1	1		777			777	803	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1098	1721	0.639	1100	1134	1.5	1.8	5.922	A
	Exit	1	1		970			970	1026	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	689	706	0.975	687	715	21.5	22.8	117.423	F
			2	A, C, D	153	665	0.231	153	167	0.2	0.3	7.193	A
	Exit	1	1		595			595	630	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1102	1796	0.613	1101	1131	1.6	1.5	5.203	A
	Exit	1	1		1388			1388	1432	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	465	980	0.474	465	497	0.9	1.1	7.333	A
			2	A, B, C	251	1016	0.247	251	255	0.3	0.3	4.742	A
	Exit	1	1		777			777	802	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1083	1717	0.630	1086	1130	1.8	1.8	5.946	A
	Exit	1	1		982			982	1032	0.0	0.0	0.000	A

09:00 - 09:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	695	702	0.992	680	711	22.8	25.5	128.816	F
			2	A, C, D	149	672	0.221	149	164	0.3	0.3	6.863	A
	Exit	1	1		598			598	622	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1094	1798	0.609	1095	1122	1.5	1.6	5.134	A
	Exit	1	1		1387			1387	1428	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	460	984	0.468	461	493	1.1	0.9	7.016	A
			2	A, B, C	251	1020	0.246	250	255	0.3	0.4	4.673	A
	Exit	1	1		774			774	800	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1093	1714	0.638	1095	1130	1.8	1.7	5.871	A
	Exit	1	1		971			971	1024	0.0	0.0	0.000	A

09:15 - 09:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	701	707	0.994	694	709	25.5	28.7	131.738	F
			2	A, C, D	152	675	0.225	151	166	0.3	0.3	6.978	A
	Exit	1	1		598			598	629	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1087	1804	0.602	1088	1131	1.6	1.5	5.285	A
	Exit	1	1		1397			1397	1430	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	465	986	0.471	467	498	0.9	0.8	7.215	A
			2	A, B, C	244	1024	0.239	245	255	0.4	0.2	4.652	A
	Exit	1	1		769			769	804	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1091	1719	0.635	1091	1135	1.7	1.6	5.917	A
	Exit	1	1		971			971	1030	0.0	0.0	0.000	A

2028 Base + Committed + Proposed, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Profile Type	D12 - 2028 Base + Committed + Proposed, PM	The DIRECT profile type is intended to be used for demand that varies over time. You are using it with the 'Use O-D data' option, but your O-D data does not vary over time. Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Mountnessing Roundabout	Large Roundabout		A, B, C, D	5.98	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A - A12 (E)	760	88.10
B - Chelmsford Road	504	0.00
C - A12 (W)	965	86.00
D - Roman Road	672	0.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D12	2028 Base + Committed + Proposed	PM	DIRECT	17:00	18:30	90	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - A12 (E)		DIRECT	✓	100.000
B - Chelmsford Road		DIRECT	✓	100.000
C - A12 (W)		DIRECT	✓	100.000
D - Roman Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A12 (E)	B - Chelmsford Road	C - A12 (W)	D - Roman Road
From	A - A12 (E)	0	527	2	110
	B - Chelmsford Road	496	1	176	384
	C - A12 (W)	2	277	0	563
	D - Roman Road	130	230	379	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A12 (E)	B - Chelmsford Road	C - A12 (W)	D - Roman Road
From	A - A12 (E)	0	1	0	1
	B - Chelmsford Road	2	0	1	0
	C - A12 (W)	0	3	0	4
	D - Roman Road	2	1	2	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - A12 (E)	9.69	2.1	A	634	951
B - Chelmsford Road	3.94	1.4	A	1057	1586
C - A12 (W)	7.45	1.9	A	847	1271
D - Roman Road	3.98	1.0	A	739	1108

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	632	158	874	635	637	630	0.0	1.4	8.979	A
B - Chelmsford Road	1067	267	481	1064	1068	1028	0.0	1.1	3.942	A
C - A12 (W)	837	209	994	835	852	551	0.0	1.8	7.147	A
D - Roman Road	729	182	774	730	767	1055	0.0	1.0	3.821	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	622	156	893	622	636	649	1.4	1.7	9.033	A
B - Chelmsford Road	1081	270	483	1079	1084	1033	1.1	1.4	3.819	A
C - A12 (W)	855	214	1013	860	874	549	1.8	1.8	7.354	A
D - Roman Road	733	183	803	739	752	1070	1.0	0.6	3.808	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	637	159	875	642	654	615	1.7	1.5	9.692	A
B - Chelmsford Road	1036	259	489	1037	1072	1028	1.4	0.9	3.869	A
C - A12 (W)	837	209	981	837	863	545	1.8	1.7	7.255	A
D - Roman Road	730	183	761	729	757	1057	0.6	0.6	3.770	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	656	164	891	658	655	622	1.5	1.8	9.591	A
B - Chelmsford Road	1049	262	497	1051	1068	1051	0.9	1.0	3.828	A
C - A12 (W)	840	210	981	840	875	567	1.7	1.8	7.446	A
D - Roman Road	744	186	764	749	757	1057	0.6	0.6	3.983	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	628	157	899	618	638	615	1.8	2.1	9.187	A
B - Chelmsford Road	1058	264	486	1057	1067	1031	1.0	0.9	3.755	A
C - A12 (W)	857	214	982	851	880	561	1.8	1.8	7.358	A
D - Roman Road	744	186	770	744	754	1062	0.6	0.7	3.734	A

18:15 - 18:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	628	157	900	635	633	633	2.1	1.7	9.552	A
B - Chelmsford Road	1051	263	487	1053	1054	1049	0.9	1.2	3.890	A
C - A12 (W)	858	214	988	856	881	552	1.8	1.8	7.183	A
D - Roman Road	754	189	781	752	761	1063	0.7	0.7	3.930	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	518	888	0.583	521	523	0.0	1.2	9.856	A
			2	A, C, D	114	888	0.129	113	114	0.0	0.3	4.960	A
	Exit	1	1		630			630	639	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1067	2015	0.530	1064	1068	0.0	1.1	3.942	A
	Exit	1	1		1028			1028	1044	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	561	1004	0.560	561	566	0.0	1.3	8.266	A
			2	A, B, C	276	1016	0.271	275	286	0.0	0.4	4.945	A
	Exit	1	1		551			551	576	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	729	1690	0.431	730	767	0.0	1.0	3.821	A
	Exit	1	1		1055			1055	1065	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	516	877	0.589	517	525	1.2	1.5	9.964	A
			2	A, C, D	106	880	0.120	106	111	0.3	0.2	4.614	A
	Exit	1	1		649			649	650	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1081	2024	0.534	1079	1084	1.1	1.4	3.819	A
	Exit	1	1		1033			1033	1051	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	566	995	0.570	571	580	1.3	1.4	8.438	A
			2	A, B, C	289	1005	0.287	289	294	0.4	0.4	5.233	A
	Exit	1	1		549			549	561	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	733	1672	0.438	739	752	1.0	0.6	3.808	A
	Exit	1	1		1070			1070	1084	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	524	885	0.592	529	543	1.5	1.3	10.732	B
			2	A, C, D	113	887	0.127	113	111	0.2	0.2	4.614	A
	Exit	1	1		615			615	638	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1036	2010	0.516	1037	1072	1.4	0.9	3.869	A
	Exit	1	1		1028			1028	1060	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	558	1009	0.553	559	576	1.4	1.3	8.299	A
			2	A, B, C	278	1025	0.272	278	287	0.4	0.4	5.183	A
	Exit	1	1		545			545	572	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	730	1701	0.429	729	757	0.6	0.6	3.770	A
	Exit	1	1		1057			1057	1077	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	546	878	0.622	547	544	1.3	1.7	10.595	B
			2	A, C, D	110	884	0.125	111	111	0.2	0.2	4.707	A
	Exit	1	1		622			622	642	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1049	2004	0.524	1051	1068	0.9	1.0	3.828	A
	Exit	1	1		1051			1051	1062	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	571	1007	0.565	572	591	1.3	1.4	8.746	A
			2	A, B, C	270	1020	0.265	268	284	0.4	0.4	4.768	A
	Exit	1	1		567			567	567	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	744	1696	0.439	749	757	0.6	0.6	3.983	A
	Exit	1	1		1057			1057	1084	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	522	875	0.597	515	526	1.7	1.9	10.126	B
			2	A, C, D	105	874	0.120	103	112	0.2	0.2	4.782	A
	Exit	1	1		615			615	634	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1058	2021	0.524	1057	1067	1.0	0.9	3.755	A
	Exit	1	1		1031			1031	1047	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	573	1008	0.569	567	590	1.4	1.5	8.657	A
			2	A, B, C	284	1019	0.279	284	291	0.4	0.3	4.741	A
	Exit	1	1		561			561	569	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	744	1692	0.440	744	754	0.6	0.7	3.734	A
	Exit	1	1		1062			1062	1089	0.0	0.0	0.000	A

18:15 - 18:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	524	874	0.599	528	523	1.9	1.6	10.627	B
			2	A, C, D	105	871	0.120	106	110	0.2	0.1	4.451	A
	Exit	1	1		633			633	630	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1051	2009	0.523	1053	1054	0.9	1.2	3.890	A
	Exit	1	1		1049			1049	1048	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	578	1007	0.574	577	595	1.5	1.4	8.240	A
			2	A, B, C	280	1012	0.277	279	286	0.3	0.5	5.013	A
	Exit	1	1		552			552	573	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	754	1678	0.449	752	761	0.7	0.7	3.930	A
	Exit	1	1		1063			1063	1079	0.0	0.0	0.000	A

2033 Base + Committed Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	A - A12 (E) - Lane Simulation	Arm A: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Profile Type	D13 - 2033 Base + Committed Development, AM	The DIRECT profile type is intended to be used for demand that varies over time. You are using it with the 'Use O-D data' option, but your O-D data does not vary over time. Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Mountnessing Roundabout	Large Roundabout		A, B, C, D	23.23	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A - A12 (E)	1142	88.10
B - Chelmsford Road	667	0.00
C - A12 (W)	899	86.00
D - Roman Road	621	0.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D13	2033 Base + Committed Development	AM	DIRECT	08:00	09:30	90	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - A12 (E)		DIRECT	✓	100.000
B - Chelmsford Road		DIRECT	✓	100.000
C - A12 (W)		DIRECT	✓	100.000
D - Roman Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A12 (E)	B - Chelmsford Road	C - A12 (W)	D - Roman Road
From	A - A12 (E)	1	689	11	140
	B - Chelmsford Road	417	1	227	344
	C - A12 (W)	3	226	1	465
	D - Roman Road	158	446	476	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A12 (E)	B - Chelmsford Road	C - A12 (W)	D - Roman Road
From	A - A12 (E)	0	4	18	9
	B - Chelmsford Road	5	0	2	3
	C - A12 (W)	0	4	0	7
	D - Roman Road	6	2	5	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - A12 (E)	81.33	19.5	F	838	1256
B - Chelmsford Road	4.57	1.3	A	986	1479
C - A12 (W)	6.20	1.2	A	690	1035
D - Roman Road	5.80	1.8	A	1080	1620

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	835	209	1154	815	831	588	0.0	11.0	36.901	E
B - Chelmsford Road	987	247	627	987	1024	1342	0.0	1.3	4.556	A
C - A12 (W)	696	174	909	695	734	705	0.0	1.1	6.100	A
D - Roman Road	1080	270	663	1079	1118	942	0.0	1.8	5.804	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	830	208	1142	831	869	584	11.0	13.2	56.045	F
B - Chelmsford Road	991	248	630	992	1029	1343	1.3	1.2	4.511	A
C - A12 (W)	689	172	905	693	734	717	1.1	1.2	6.079	A
D - Roman Road	1078	270	648	1078	1116	949	1.8	1.6	5.601	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	839	210	1154	826	870	577	13.2	16.4	64.968	F
B - Chelmsford Road	985	246	636	986	1019	1343	1.2	1.2	4.512	A
C - A12 (W)	689	172	897	689	736	725	1.2	1.0	6.198	A
D - Roman Road	1083	271	649	1082	1122	937	1.6	1.7	5.553	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	833	208	1158	818	872	574	16.4	17.8	74.420	F
B - Chelmsford Road	993	248	634	991	1030	1342	1.2	1.3	4.511	A
C - A12 (W)	689	172	904	690	735	720	1.0	1.2	6.203	A
D - Roman Road	1091	273	642	1090	1124	952	1.7	1.7	5.672	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	841	210	1142	839	877	576	17.8	19.1	81.335	F
B - Chelmsford Road	982	245	623	981	1025	1358	1.3	1.1	4.568	A
C - A12 (W)	686	172	894	686	730	710	1.2	1.2	5.931	A
D - Roman Road	1068	267	649	1069	1117	931	1.7	1.5	5.509	A

09:15 - 09:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	847	212	1147	842	883	581	19.1	19.7	78.320	F
B - Chelmsford Road	976	244	630	977	1021	1359	1.1	1.1	4.562	A
C - A12 (W)	693	173	898	694	740	709	1.2	1.1	6.024	A
D - Roman Road	1082	270	648	1080	1120	944	1.5	1.6	5.467	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	687	719	0.955	666	666	0.0	10.7	43.597	E
			2	A, C, D	148	680	0.217	149	166	0.0	0.3	6.810	A
	Exit	1	1		588			588	614	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	987	1798	0.549	987	1024	0.0	1.3	4.556	A
	Exit	1	1		1342			1342	1352	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	465	998	0.466	465	497	0.0	0.8	6.891	A
			2	A, B, C	230	1031	0.224	231	236	0.0	0.3	4.483	A
	Exit	1	1		705			705	738	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1080	1737	0.622	1079	1118	0.0	1.8	5.804	A
	Exit	1	1		942			942	1003	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	680	724	0.940	681	705	10.7	13.0	66.853	F
			2	A, C, D	150	690	0.219	150	164	0.3	0.2	6.820	A
	Exit	1	1		584			584	611	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	991	1799	0.551	992	1029	1.3	1.2	4.511	A
	Exit	1	1		1343			1343	1387	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	464	1004	0.462	467	499	0.8	1.0	6.823	A
			2	A, B, C	225	1037	0.217	226	235	0.3	0.3	4.545	A
	Exit	1	1		717			717	743	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1078	1751	0.616	1078	1116	1.8	1.6	5.601	A
	Exit	1	1		949			949	1007	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	687	719	0.956	672	704	13.0	16.2	77.836	F
			2	A, C, D	152	680	0.224	153	166	0.2	0.2	6.835	A
	Exit	1	1		577			577	603	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	985	1797	0.548	986	1019	1.2	1.2	4.512	A
	Exit	1	1		1343			1343	1397	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	462	1015	0.455	461	497	1.0	0.7	7.019	A
			2	A, B, C	227	1046	0.217	227	240	0.3	0.3	4.549	A
	Exit	1	1		725			725	747	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1083	1751	0.618	1082	1122	1.6	1.7	5.553	A
	Exit	1	1		937			937	1001	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	684	717	0.955	669	707	16.2	17.5	89.293	F
			2	A, C, D	148	679	0.218	148	165	0.2	0.3	6.950	A
	Exit	1	1		574			574	609	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	993	1795	0.554	991	1030	1.2	1.3	4.511	A
	Exit	1	1		1342			1342	1399	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	464	1006	0.461	465	499	0.7	0.9	7.012	A
			2	A, B, C	225	1030	0.218	226	236	0.3	0.3	4.538	A
	Exit	1	1		720			720	747	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1091	1753	0.622	1090	1124	1.7	1.7	5.672	A
	Exit	1	1		952			952	1006	0.0	0.0	0.000	A

09:00 - 09:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	691	723	0.956	690	711	17.5	18.8	97.647	F
			2	A, C, D	150	687	0.218	149	166	0.3	0.3	6.848	A
	Exit	1	1		576			576	606	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	982	1802	0.545	981	1025	1.3	1.1	4.568	A
	Exit	1	1		1358			1358	1396	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	459	1010	0.454	458	494	0.9	1.0	6.637	A
			2	A, B, C	227	1042	0.218	228	237	0.3	0.2	4.498	A
	Exit	1	1		710			710	748	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1068	1746	0.612	1069	1117	1.7	1.5	5.509	A
	Exit	1	1		931			931	999	0.0	0.0	0.000	A

09:15 - 09:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	695	719	0.965	690	716	18.8	19.3	95.166	F
			2	A, C, D	153	684	0.223	151	167	0.3	0.3	6.689	A
	Exit	1	1		581			581	610	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	976	1802	0.542	977	1021	1.1	1.1	4.562	A
	Exit	1	1		1359			1359	1404	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	466	1006	0.464	468	503	1.0	0.9	6.786	A
			2	A, B, C	227	1039	0.218	227	237	0.2	0.3	4.469	A
	Exit	1	1		709			709	742	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1082	1753	0.617	1080	1120	1.5	1.6	5.467	A
	Exit	1	1		944			944	1009	0.0	0.0	0.000	A

2033 Base + Committed Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Profile Type	D14 - 2033 Base + Committed Development, PM	The DIRECT profile type is intended to be used for demand that varies over time. You are using it with the 'Use O-D data' option, but your O-D data does not vary over time. Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Mountnessing Roundabout	Large Roundabout		A, B, C, D	5.64	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A - A12 (E)	760	88.10
B - Chelmsford Road	504	0.00
C - A12 (W)	965	86.00
D - Roman Road	672	0.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D14	2033 Base + Committed Development	PM	DIRECT	17:00	18:30	90	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - A12 (E)		DIRECT	✓	100.000
B - Chelmsford Road		DIRECT	✓	100.000
C - A12 (W)		DIRECT	✓	100.000
D - Roman Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A12 (E)	B - Chelmsford Road	C - A12 (W)	D - Roman Road
From	A - A12 (E)	0	511	2	111
	B - Chelmsford Road	491	1	155	376
	C - A12 (W)	2	225	0	566
	D - Roman Road	131	209	381	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A12 (E)	B - Chelmsford Road	C - A12 (W)	D - Roman Road
From	A - A12 (E)	0	1	0	1
	B - Chelmsford Road	2	0	1	0
	C - A12 (W)	0	4	0	4
	D - Roman Road	2	1	2	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - A12 (E)	8.45	1.5	A	618	926
B - Chelmsford Road	3.78	1.1	A	1021	1532
C - A12 (W)	7.51	1.7	A	799	1198
D - Roman Road	3.77	1.2	A	727	1090

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	626	157	825	626	629	647	0.0	1.5	8.445	A
B - Chelmsford Road	1027	257	511	1030	1034	940	0.0	1.0	3.706	A
C - A12 (W)	779	195	992	786	816	549	0.0	1.3	7.020	A
D - Roman Road	748	187	726	746	737	1052	0.0	0.8	3.734	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	614	153	825	617	620	615	1.5	1.0	7.825	A
B - Chelmsford Road	1017	254	486	1018	1049	957	1.0	0.9	3.667	A
C - A12 (W)	832	208	971	832	838	533	1.3	1.7	7.250	A
D - Roman Road	717	179	719	720	730	1084	0.8	0.6	3.542	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	608	152	807	617	632	628	1.0	1.4	8.452	A
B - Chelmsford Road	1017	254	474	1017	1035	949	0.9	1.1	3.736	A
C - A12 (W)	803	201	967	806	821	524	1.7	1.7	7.228	A
D - Roman Road	710	177	727	708	731	1046	0.6	0.7	3.719	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	610	153	832	613	636	612	1.4	1.4	7.976	A
B - Chelmsford Road	1024	256	504	1021	1031	942	1.1	1.0	3.776	A
C - A12 (W)	798	199	978	799	824	546	1.7	1.5	7.505	A
D - Roman Road	730	182	716	729	731	1061	0.7	0.8	3.592	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	613	153	814	609	624	646	1.4	1.2	7.594	A
B - Chelmsford Road	1019	255	494	1019	1023	929	1.0	0.9	3.554	A
C - A12 (W)	800	200	988	802	830	524	1.5	1.6	7.095	A
D - Roman Road	730	182	735	724	737	1056	0.8	1.0	3.766	A

18:15 - 18:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	635	159	802	640	626	622	1.2	1.3	8.404	A
B - Chelmsford Road	1024	256	484	1021	1027	958	0.9	1.1	3.458	A
C - A12 (W)	783	196	976	784	824	529	1.6	1.5	7.062	A
D - Roman Road	724	181	707	717	748	1052	1.0	1.2	3.724	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	514	912	0.563	512	515	0.0	1.4	9.328	A
			2	A, C, D	113	912	0.123	113	114	0.0	0.1	4.437	A
	Exit	1	1		647			647	644	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1027	1995	0.515	1030	1034	0.0	1.0	3.706	A
	Exit	1	1		940			940	956	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	549	1004	0.547	556	580	0.0	1.0	7.989	A
			2	A, B, C	230	1020	0.226	230	236	0.0	0.2	4.648	A
	Exit	1	1		549			549	544	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	748	1735	0.431	746	737	0.0	0.8	3.734	A
	Exit	1	1		1052			1052	1073	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	509	915	0.557	512	514	1.4	0.9	8.549	A
			2	A, C, D	104	919	0.114	105	106	0.1	0.1	4.340	A
	Exit	1	1		615			615	639	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1017	2011	0.506	1018	1049	1.0	0.9	3.667	A
	Exit	1	1		957			957	961	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	602	1022	0.590	603	600	1.0	1.4	8.269	A
			2	A, B, C	230	1020	0.226	230	237	0.2	0.3	4.675	A
	Exit	1	1		533			533	550	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	717	1736	0.413	720	730	0.8	0.6	3.542	A
	Exit	1	1		1084			1084	1088	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	509	920	0.553	517	521	0.9	1.3	9.259	A
			2	A, C, D	100	920	0.108	99	110	0.1	0.1	4.628	A
	Exit	1	1		628			628	638	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1017	2026	0.502	1017	1035	0.9	1.1	3.736	A
	Exit	1	1		949			949	959	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	575	1020	0.563	577	588	1.4	1.5	8.318	A
			2	A, B, C	228	1014	0.224	229	232	0.3	0.2	4.451	A
	Exit	1	1		524			524	549	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	710	1735	0.409	708	731	0.6	0.7	3.719	A
	Exit	1	1		1046			1046	1072	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	497	903	0.550	500	517	1.3	1.2	8.750	A
			2	A, C, D	113	908	0.124	113	119	0.1	0.1	4.622	A
	Exit	1	1		612			612	625	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1024	1999	0.512	1021	1031	1.1	1.0	3.776	A
	Exit	1	1		942			942	959	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	568	1010	0.562	569	588	1.5	1.4	8.753	A
			2	A, B, C	230	1006	0.229	230	236	0.2	0.2	4.398	A
	Exit	1	1		546			546	552	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	730	1732	0.422	729	731	0.7	0.8	3.592	A
	Exit	1	1		1061			1061	1085	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	500	917	0.545	495	506	1.2	1.1	8.281	A
			2	A, C, D	113	919	0.124	114	119	0.1	0.1	4.662	A
	Exit	1	1		646			646	644	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1019	2007	0.508	1019	1023	1.0	0.9	3.554	A
	Exit	1	1		929			929	941	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	573	1013	0.565	576	596	1.4	1.4	8.092	A
			2	A, B, C	227	1011	0.224	227	234	0.2	0.2	4.560	A
	Exit	1	1		524			524	545	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	730	1717	0.425	724	737	0.8	1.0	3.766	A
	Exit	1	1		1056			1056	1083	0.0	0.0	0.000	A

18:15 - 18:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	527	924	0.571	531	516	1.1	1.1	9.212	A
			2	A, C, D	108	917	0.118	108	110	0.1	0.2	4.616	A
	Exit	1	1		622			622	628	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1024	2013	0.509	1021	1027	0.9	1.1	3.458	A
	Exit	1	1		958			958	972	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	568	1020	0.556	568	587	1.4	1.2	8.043	A
			2	A, B, C	216	1014	0.213	215	238	0.2	0.3	4.645	A
	Exit	1	1		529			529	551	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	724	1746	0.415	717	748	1.0	1.2	3.724	A
	Exit	1	1		1052			1052	1075	0.0	0.0	0.000	A

2033 Base + Proposed Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	A - A12 (E) - Lane Simulation	Arm A: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Profile Type	D15 - 2033 Base + Proposed Development, AM	The DIRECT profile type is intended to be used for demand that varies over time. You are using it with the 'Use O-D data' option, but your O-D data does not vary over time. Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Mountnessing Roundabout	Large Roundabout		A, B, C, D	34.71	D

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A - A12 (E)	1142	88.10
B - Chelmsford Road	667	0.00
C - A12 (W)	899	86.00
D - Roman Road	621	0.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D15	2033 Base + Proposed Development	AM	DIRECT	08:00	09:30	90	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - A12 (E)		DIRECT	✓	100.000
B - Chelmsford Road		DIRECT	✓	100.000
C - A12 (W)		DIRECT	✓	100.000
D - Roman Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A12 (E)	B - Chelmsford Road	C - A12 (W)	D - Roman Road
From	A - A12 (E)	1	695	11	140
	B - Chelmsford Road	404	1	189	330
	C - A12 (W)	3	244	1	465
	D - Roman Road	158	453	476	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A12 (E)	B - Chelmsford Road	C - A12 (W)	D - Roman Road
From	A - A12 (E)	0	4	18	9
	B - Chelmsford Road	5	0	3	3
	C - A12 (W)	0	4	0	7
	D - Roman Road	6	2	5	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - A12 (E)	128.82	31.0	F	848	1272
B - Chelmsford Road	4.33	1.4	A	929	1394
C - A12 (W)	6.09	1.4	A	713	1069
D - Roman Road	5.70	1.9	A	1091	1636

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	844	211	1182	794	825	559	0.0	14.9	44.740	E
B - Chelmsford Road	916	229	627	913	949	1350	0.0	1.2	4.310	A
C - A12 (W)	717	179	856	716	749	684	0.0	1.4	5.882	A
D - Roman Road	1086	271	658	1083	1129	914	0.0	1.8	5.530	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	859	215	1187	822	866	568	14.9	22.1	82.311	F
B - Chelmsford Road	935	234	633	934	956	1375	1.2	1.4	4.218	A
C - A12 (W)	714	178	882	716	768	685	1.4	1.2	6.078	A
D - Roman Road	1098	275	656	1098	1135	942	1.8	1.9	5.691	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	838	210	1159	825	876	566	22.1	25.1	104.075	F
B - Chelmsford Road	937	234	627	937	964	1357	1.4	1.1	4.290	A
C - A12 (W)	710	178	880	711	751	684	1.2	1.1	5.972	A
D - Roman Road	1081	270	647	1077	1132	944	1.9	1.8	5.640	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	851	213	1177	826	883	566	25.1	29.1	117.205	F
B - Chelmsford Road	942	236	639	944	969	1365	1.1	1.0	4.296	A
C - A12 (W)	704	176	893	706	751	690	1.1	1.1	5.849	A
D - Roman Road	1092	273	655	1089	1125	944	1.8	1.9	5.700	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	849	212	1175	855	889	562	29.1	30.4	128.824	F
B - Chelmsford Road	929	232	630	927	965	1400	1.0	1.1	4.335	A
C - A12 (W)	719	180	881	718	756	676	1.1	1.1	5.782	A
D - Roman Road	1084	271	654	1083	1131	945	1.9	1.5	5.417	A

09:15 - 09:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	847	212	1175	844	891	569	30.4	31.2	117.137	F
B - Chelmsford Road	916	229	632	918	960	1387	1.1	0.8	4.168	A
C - A12 (W)	713	178	874	711	757	677	1.1	1.4	6.089	A
D - Roman Road	1103	276	647	1097	1128	937	1.5	1.8	5.579	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	700	708	0.991	651	666	0.0	14.6	52.637	F
			2	A, C, D	144	670	0.214	142	158	0.0	0.3	6.994	A
	Exit	1	1		559			559	595	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	916	1798	0.509	913	949	0.0	1.2	4.310	A
	Exit	1	1		1350			1350	1377	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	464	1034	0.449	462	494	0.0	1.1	6.641	A
			2	A, B, C	253	1064	0.237	253	254	0.0	0.3	4.450	A
	Exit	1	1		684			684	707	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1086	1746	0.621	1083	1129	0.0	1.8	5.530	A
	Exit	1	1		914			914	973	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	705	702	1.006	670	698	14.6	21.7	98.712	F
			2	A, C, D	153	661	0.233	151	167	0.3	0.3	7.129	A
	Exit	1	1		568			568	593	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	935	1796	0.521	934	956	1.2	1.4	4.218	A
	Exit	1	1		1375			1375	1421	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	463	1017	0.455	466	509	1.1	0.9	6.841	A
			2	A, B, C	251	1042	0.241	250	260	0.3	0.3	4.629	A
	Exit	1	1		685			685	705	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1098	1744	0.630	1098	1135	1.8	1.9	5.691	A
	Exit	1	1		942			942	1007	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	683	716	0.953	673	709	21.7	24.7	125.540	F
			2	A, C, D	156	684	0.228	152	167	0.3	0.4	7.324	A
	Exit	1	1		566			566	595	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	937	1804	0.519	937	964	1.4	1.1	4.290	A
	Exit	1	1		1357			1357	1425	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	467	1023	0.456	467	497	0.9	0.8	6.634	A
			2	A, B, C	243	1044	0.233	243	254	0.3	0.3	4.705	A
	Exit	1	1		684			684	710	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1081	1752	0.617	1077	1132	1.9	1.8	5.640	A
	Exit	1	1		944			944	993	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	698	706	0.986	674	712	24.7	28.8	141.284	F
			2	A, C, D	153	673	0.228	153	170	0.4	0.3	7.206	A
	Exit	1	1		566			566	594	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	942	1785	0.528	944	969	1.1	1.0	4.296	A
	Exit	1	1		1365			1365	1433	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	461	1014	0.455	464	490	0.8	0.6	6.552	A
			2	A, B, C	242	1039	0.233	242	261	0.3	0.4	4.561	A
	Exit	1	1		690			690	711	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1092	1749	0.625	1089	1125	1.8	1.9	5.700	A
	Exit	1	1		944			944	989	0.0	0.0	0.000	A

09:00 - 09:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	696	707	0.984	702	720	28.8	30.1	155.755	F
			2	A, C, D	153	668	0.228	152	169	0.3	0.3	7.037	A
	Exit	1	1		562			562	597	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	929	1796	0.518	927	965	1.0	1.1	4.335	A
	Exit	1	1		1400			1400	1443	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	469	1014	0.463	467	494	0.6	0.9	6.512	A
			2	A, B, C	250	1044	0.239	250	261	0.4	0.2	4.436	A
	Exit	1	1		676			676	707	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1084	1747	0.620	1083	1131	1.9	1.5	5.417	A
	Exit	1	1		945			945	994	0.0	0.0	0.000	A

09:15 - 09:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	695	712	0.976	692	722	30.1	30.9	144.166	F
			2	A, C, D	151	676	0.224	151	169	0.3	0.3	7.086	A
	Exit	1	1		569			569	599	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	916	1789	0.512	918	960	1.1	0.8	4.168	A
	Exit	1	1		1387			1387	1435	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	467	1017	0.459	465	502	0.9	1.0	6.847	A
			2	A, B, C	246	1053	0.234	246	255	0.2	0.3	4.650	A
	Exit	1	1		677			677	706	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1103	1752	0.630	1097	1128	1.5	1.8	5.579	A
	Exit	1	1		937			937	995	0.0	0.0	0.000	A

2033 Base + Proposed Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Profile Type	D16 - 2033 Base + Proposed Development, PM	The DIRECT profile type is intended to be used for demand that varies over time. You are using it with the 'Use O-D data' option, but your O-D data does not vary over time. Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Mountnessing Roundabout	Large Roundabout		A, B, C, D	5.69	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A - A12 (E)	760	88.10
B - Chelmsford Road	504	0.00
C - A12 (W)	965	86.00
D - Roman Road	672	0.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D16	2033 Base + Proposed Development	PM	DIRECT	17:00	18:30	90	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - A12 (E)		DIRECT	✓	100.000
B - Chelmsford Road		DIRECT	✓	100.000
C - A12 (W)		DIRECT	✓	100.000
D - Roman Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A12 (E)	B - Chelmsford Road	C - A12 (W)	D - Roman Road
From	A - A12 (E)	0	511	2	111
	B - Chelmsford Road	487	1	145	372
	C - A12 (W)	2	224	0	566
	D - Roman Road	131	208	381	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A12 (E)	B - Chelmsford Road	C - A12 (W)	D - Roman Road
From	A - A12 (E)	0	1	0	1
	B - Chelmsford Road	2	0	1	0
	C - A12 (W)	0	4	0	4
	D - Roman Road	2	1	2	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - A12 (E)	8.57	1.7	A	634	951
B - Chelmsford Road	3.77	1.2	A	993	1490
C - A12 (W)	7.37	1.9	A	805	1207
D - Roman Road	3.88	0.8	A	722	1083

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	636	159	806	640	640	627	0.0	1.2	8.030	A
B - Chelmsford Road	1002	250	499	1003	1011	947	0.0	0.8	3.578	A
C - A12 (W)	783	196	969	790	816	533	0.0	1.4	7.373	A
D - Roman Road	726	181	704	730	738	1056	0.0	0.6	3.533	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	618	155	810	618	627	630	1.2	1.4	8.224	A
B - Chelmsford Road	992	248	493	993	1003	936	0.8	0.9	3.583	A
C - A12 (W)	813	203	981	818	836	506	1.4	1.7	7.005	A
D - Roman Road	712	178	728	712	727	1071	0.6	0.6	3.524	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	625	156	820	624	628	616	1.4	1.3	7.718	A
B - Chelmsford Road	993	248	486	992	1015	958	0.9	0.8	3.465	A
C - A12 (W)	804	201	952	810	825	526	1.7	1.5	7.365	A
D - Roman Road	715	179	722	714	715	1039	0.6	0.8	3.531	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	632	158	797	634	632	623	1.3	1.4	8.182	A
B - Chelmsford Road	994	249	486	996	1006	945	0.8	1.2	3.407	A
C - A12 (W)	805	201	972	798	821	510	1.5	1.6	7.001	A
D - Roman Road	707	177	713	706	733	1056	0.8	0.8	3.532	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	655	164	800	652	648	620	1.4	1.7	8.571	A
B - Chelmsford Road	1009	252	497	1007	1012	955	1.2	1.2	3.551	A
C - A12 (W)	809	202	986	802	824	518	1.6	1.8	7.244	A
D - Roman Road	721	180	699	720	741	1089	0.8	0.7	3.558	A

18:15 - 18:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	640	160	842	637	646	614	1.7	1.6	8.220	A
B - Chelmsford Road	972	243	509	975	1002	970	1.2	1.1	3.774	A
C - A12 (W)	813	203	946	818	839	539	1.8	1.4	7.184	A
D - Roman Road	749	187	703	753	749	1061	0.7	0.8	3.882	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	527	919	0.574	529	524	0.0	1.2	8.815	A
			2	A, C, D	109	917	0.119	110	117	0.0	0.1	4.478	A
	Exit	1	1		627			627	632	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1002	2003	0.500	1003	1011	0.0	0.8	3.578	A
	Exit	1	1		947			947	961	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	568	1015	0.559	575	588	0.0	1.2	8.449	A
			2	A, B, C	215	1007	0.214	215	228	0.0	0.3	4.582	A
	Exit	1	1		533			533	539	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	726	1751	0.415	730	738	0.0	0.6	3.533	A
	Exit	1	1		1056			1056	1074	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	499	917	0.544	500	513	1.2	1.2	9.014	A
			2	A, C, D	119	922	0.129	119	113	0.1	0.2	4.687	A
	Exit	1	1		630			630	633	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	992	2012	0.493	993	1003	0.8	0.9	3.583	A
	Exit	1	1		936			936	959	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	583	1011	0.578	589	598	1.2	1.3	7.946	A
			2	A, B, C	230	1002	0.229	229	238	0.3	0.4	4.642	A
	Exit	1	1		506			506	526	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	712	1721	0.414	712	727	0.6	0.6	3.524	A
	Exit	1	1		1071			1071	1075	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	515	914	0.563	514	516	1.2	1.2	8.430	A
			2	A, C, D	110	911	0.121	109	111	0.2	0.1	4.408	A
	Exit	1	1		616			616	634	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	993	2015	0.493	992	1015	0.9	0.8	3.465	A
	Exit	1	1		958			958	960	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	571	1030	0.553	576	589	1.3	1.3	8.502	A
			2	A, B, C	234	1029	0.227	234	236	0.4	0.3	4.529	A
	Exit	1	1		526			526	523	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	715	1735	0.412	714	715	0.6	0.8	3.531	A
	Exit	1	1		1039			1039	1066	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	512	922	0.555	515	518	1.2	1.2	9.010	A
			2	A, C, D	120	921	0.130	120	114	0.1	0.2	4.410	A
	Exit	1	1		623			623	643	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	994	2016	0.493	996	1006	0.8	1.2	3.407	A
	Exit	1	1		945			945	961	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	580	1017	0.571	574	590	1.3	1.4	7.908	A
			2	A, B, C	225	1010	0.222	224	231	0.3	0.2	4.694	A
	Exit	1	1		510			510	528	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	707	1734	0.408	706	733	0.8	0.8	3.532	A
	Exit	1	1		1056			1056	1060	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	536	926	0.580	536	533	1.2	1.4	9.426	A
			2	A, C, D	118	925	0.128	116	115	0.2	0.3	4.620	A
	Exit	1	1		620			620	629	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1009	2008	0.503	1007	1012	1.2	1.2	3.551	A
	Exit	1	1		955			955	972	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	593	1011	0.587	588	595	1.4	1.5	8.321	A
			2	A, B, C	216	1005	0.215	215	229	0.2	0.3	4.439	A
	Exit	1	1		518			518	543	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	721	1750	0.412	720	741	0.8	0.7	3.558	A
	Exit	1	1		1089			1089	1082	0.0	0.0	0.000	A

18:15 - 18:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	527	904	0.583	525	531	1.4	1.4	9.005	A
			2	A, C, D	113	906	0.125	113	114	0.3	0.2	4.554	A
	Exit	1	1		614			614	626	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	972	1989	0.488	975	1002	1.2	1.1	3.774	A
	Exit	1	1		970			970	980	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	585	1023	0.572	589	602	1.5	1.1	8.186	A
			2	A, B, C	228	1029	0.221	229	236	0.3	0.3	4.632	A
	Exit	1	1		539			539	549	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	749	1748	0.428	753	749	0.7	0.8	3.882	A
	Exit	1	1		1061			1061	1080	0.0	0.0	0.000	A

2033 Base + Proposed + Committed, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	A - A12 (E) - Lane Simulation	Arm A: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Profile Type	D17 - 2033 Base + Proposed + Committed, AM	The DIRECT profile type is intended to be used for demand that varies over time. You are using it with the 'Use O-D data' option, but your O-D data does not vary over time. Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Mountnessing Roundabout	Large Roundabout		A, B, C, D	34.21	D

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A - A12 (E)	1142	88.10
B - Chelmsford Road	667	0.00
C - A12 (W)	899	86.00
D - Roman Road	621	0.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D17	2033 Base + Proposed + Committed	AM	DIRECT	08:00	09:30	90	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - A12 (E)		DIRECT	✓	100.000
B - Chelmsford Road		DIRECT	✓	100.000
C - A12 (W)		DIRECT	✓	100.000
D - Roman Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A12 (E)	B - Chelmsford Road	C - A12 (W)	D - Roman Road
From	A - A12 (E)	1	695	11	140
	B - Chelmsford Road	437	1	283	372
	C - A12 (W)	3	246	1	465
	D - Roman Road	158	459	476	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A12 (E)	B - Chelmsford Road	C - A12 (W)	D - Roman Road
From	A - A12 (E)	0	4	18	9
	B - Chelmsford Road	5	0	2	3
	C - A12 (W)	0	3	0	7
	D - Roman Road	6	2	5	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - A12 (E)	130.33	33.0	F	847	1270
B - Chelmsford Road	5.36	1.9	A	1097	1646
C - A12 (W)	6.53	1.4	A	714	1071
D - Roman Road	6.26	2.4	A	1096	1644

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	837	209	1193	810	823	604	0.0	14.3	45.542	E
B - Chelmsford Road	1104	276	631	1105	1134	1372	0.0	1.5	5.269	A
C - A12 (W)	726	181	955	724	753	782	0.0	1.4	6.534	A
D - Roman Road	1102	276	692	1105	1137	988	0.0	1.8	5.688	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	848	212	1189	830	868	607	14.3	18.8	73.286	F
B - Chelmsford Road	1104	276	630	1099	1133	1390	1.5	1.9	5.289	A
C - A12 (W)	712	178	955	711	755	773	1.4	1.2	6.391	A
D - Roman Road	1105	276	696	1100	1146	971	1.8	1.9	5.925	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	848	212	1185	828	865	602	18.8	23.5	92.775	F
B - Chelmsford Road	1089	272	632	1088	1133	1381	1.9	1.7	5.355	A
C - A12 (W)	720	180	953	722	757	767	1.2	1.2	6.471	A
D - Roman Road	1090	273	695	1093	1139	980	1.9	1.7	6.261	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	843	211	1178	848	879	595	23.5	26.8	112.394	F
B - Chelmsford Road	1083	271	619	1082	1117	1407	1.7	1.6	5.152	A
C - A12 (W)	697	174	939	699	749	762	1.2	1.0	6.093	A
D - Roman Road	1087	272	682	1092	1131	957	1.7	1.8	5.963	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	847	212	1175	839	871	609	26.8	31.0	130.326	F
B - Chelmsford Road	1106	277	632	1107	1134	1382	1.6	1.4	5.141	A
C - A12 (W)	714	178	963	713	753	777	1.0	1.4	6.361	A
D - Roman Road	1089	272	693	1091	1137	983	1.8	1.7	5.906	A

09:15 - 09:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	856	214	1175	850	890	603	31.0	33.2	123.855	F
B - Chelmsford Road	1097	274	632	1094	1127	1393	1.4	1.6	5.061	A
C - A12 (W)	715	179	949	712	759	777	1.4	1.3	6.435	A
D - Roman Road	1100	275	683	1095	1139	978	1.7	2.3	5.997	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	686	703	0.976	660	659	0.0	14.0	53.974	F
			2	A, C, D	150	660	0.228	150	164	0.0	0.4	7.001	A
	Exit	1	1		604			604	628	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1104	1799	0.613	1105	1134	0.0	1.5	5.269	A
	Exit	1	1		1372			1372	1382	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	472	978	0.483	472	496	0.0	1.0	7.503	A
			2	A, B, C	254	1018	0.249	253	257	0.0	0.3	4.727	A
	Exit	1	1		782			782	807	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1102	1715	0.643	1105	1137	0.0	1.8	5.688	A
	Exit	1	1		988			988	1029	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	697	702	0.991	677	700	14.0	18.5	87.822	F
			2	A, C, D	152	667	0.228	153	167	0.4	0.3	7.262	A
	Exit	1	1		607			607	632	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1104	1804	0.612	1099	1133	1.5	1.9	5.289	A
	Exit	1	1		1390			1390	1429	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	458	985	0.466	459	498	1.0	0.8	7.310	A
			2	A, B, C	254	1019	0.249	253	257	0.3	0.4	4.679	A
	Exit	1	1		773			773	806	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1105	1713	0.645	1100	1146	1.8	1.9	5.925	A
	Exit	1	1		971			971	1034	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	696	705	0.990	675	703	18.5	23.2	111.121	F
			2	A, C, D	152	670	0.228	152	162	0.3	0.3	6.971	A
	Exit	1	1		602			602	634	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1089	1803	0.604	1088	1133	1.9	1.7	5.355	A
	Exit	1	1		1381			1381	1425	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	466	981	0.476	468	500	0.8	0.9	7.374	A
			2	A, B, C	254	1016	0.251	253	258	0.4	0.4	4.781	A
	Exit	1	1		767			767	803	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1090	1715	0.636	1093	1139	1.9	1.7	6.261	A
	Exit	1	1		980			980	1033	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	695	711	0.980	700	714	23.2	26.6	134.925	F
			2	A, C, D	149	671	0.222	148	165	0.3	0.2	6.944	A
	Exit	1	1		595			595	623	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1083	1811	0.598	1082	1117	1.7	1.6	5.152	A
	Exit	1	1		1407			1407	1435	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	453	983	0.460	453	493	0.9	0.8	6.864	A
			2	A, B, C	245	1026	0.238	246	256	0.4	0.3	4.668	A
	Exit	1	1		762			762	798	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1087	1729	0.629	1092	1131	1.7	1.8	5.963	A
	Exit	1	1		957			957	1020	0.0	0.0	0.000	A

09:00 - 09:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	693	711	0.974	684	707	26.6	30.7	157.070	F
			2	A, C, D	154	671	0.230	154	164	0.2	0.3	6.885	A
	Exit	1	1		609			609	629	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1106	1802	0.614	1107	1134	1.6	1.4	5.141	A
	Exit	1	1		1382			1382	1426	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	469	976	0.480	467	498	0.8	1.0	7.207	A
			2	A, B, C	245	1015	0.241	246	255	0.3	0.4	4.778	A
	Exit	1	1		777			777	811	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1089	1717	0.634	1091	1137	1.8	1.7	5.906	A
	Exit	1	1		983			983	1029	0.0	0.0	0.000	A

09:15 - 09:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	703	711	0.988	698	721	30.7	32.9	152.536	F
			2	A, C, D	152	675	0.226	152	169	0.3	0.3	7.160	A
	Exit	1	1		603			603	633	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1097	1798	0.610	1094	1127	1.4	1.6	5.061	A
	Exit	1	1		1393			1393	1436	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	472	985	0.480	469	505	1.0	1.0	7.368	A
			2	A, B, C	243	1022	0.238	243	255	0.4	0.3	4.660	A
	Exit	1	1		777			777	806	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	1100	1724	0.639	1095	1139	1.7	2.3	5.997	A
	Exit	1	1		978			978	1040	0.0	0.0	0.000	A

2033 Base + Proposed + Committed, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Profile Type	D18 - 2033 Base + Proposed + Committed, PM	The DIRECT profile type is intended to be used for demand that varies over time. You are using it with the 'Use O-D data' option, but your O-D data does not vary over time. Are you sure this is correct?

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Mountnessing Roundabout	Large Roundabout		A, B, C, D	6.14	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A - A12 (E)	760	88.10
B - Chelmsford Road	504	0.00
C - A12 (W)	965	86.00
D - Roman Road	672	0.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D18	2033 Base + Proposed + Committed	PM	DIRECT	17:00	18:30	90	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - A12 (E)		DIRECT	✓	100.000
B - Chelmsford Road		DIRECT	✓	100.000
C - A12 (W)		DIRECT	✓	100.000
D - Roman Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A - A12 (E)	B - Chelmsford Road	C - A12 (W)	D - Roman Road
From	A - A12 (E)	0	529	2	111
	B - Chelmsford Road	498	1	177	386
	C - A12 (W)	2	278	0	566
	D - Roman Road	131	231	381	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A - A12 (E)	B - Chelmsford Road	C - A12 (W)	D - Roman Road
From	A - A12 (E)	0	1	0	1
	B - Chelmsford Road	2	0	1	0
	C - A12 (W)	0	3	0	4
	D - Roman Road	2	1	2	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A - A12 (E)	10.37	2.6	B	640	960
B - Chelmsford Road	3.89	1.5	A	1059	1588
C - A12 (W)	7.67	2.0	A	846	1269
D - Roman Road	3.91	1.2	A	740	1110

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	624	156	879	625	630	635	0.0	1.6	8.838	A
B - Chelmsford Road	1057	264	489	1057	1091	1014	0.0	1.3	3.877	A
C - A12 (W)	832	208	998	838	863	548	0.0	1.5	7.464	A
D - Roman Road	741	185	774	739	745	1061	0.0	0.7	3.787	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	643	161	879	634	651	624	1.6	2.5	10.369	B
B - Chelmsford Road	1058	264	502	1051	1071	1011	1.3	1.5	3.882	A
C - A12 (W)	846	212	987	848	875	566	1.5	1.8	7.228	A
D - Roman Road	731	183	769	733	759	1065	0.7	0.7	3.910	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	650	162	892	651	652	623	2.5	1.6	9.867	A
B - Chelmsford Road	1043	261	498	1046	1063	1045	1.5	0.8	3.890	A
C - A12 (W)	849	212	980	849	877	564	1.8	2.0	7.512	A
D - Roman Road	753	188	767	748	759	1062	0.7	1.2	3.834	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	626	157	898	623	636	636	1.6	1.8	9.385	A
B - Chelmsford Road	1071	268	496	1069	1073	1025	0.8	1.2	3.781	A
C - A12 (W)	862	216	1010	862	886	555	2.0	1.8	7.470	A
D - Roman Road	746	187	787	747	756	1085	1.2	0.8	3.914	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	656	164	887	659	659	648	1.8	1.6	9.599	A
B - Chelmsford Road	1071	268	486	1072	1085	1060	1.2	1.1	3.865	A
C - A12 (W)	845	211	1006	843	878	552	1.8	1.8	7.673	A
D - Roman Road	732	183	800	735	760	1049	0.8	0.5	3.777	A

18:15 - 18:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Average throughput (PCU/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	638	159	876	637	642	632	1.6	1.8	9.087	A
B - Chelmsford Road	1053	263	490	1059	1070	1023	1.1	0.9	3.757	A
C - A12 (W)	844	211	992	844	876	557	1.8	2.0	7.275	A
D - Roman Road	737	184	772	735	751	1064	0.5	0.9	3.676	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	512	883	0.581	514	518	0.0	1.4	9.732	A
			2	A, C, D	112	883	0.127	110	112	0.0	0.2	4.687	A
	Exit	1	1		635			635	653	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1057	2008	0.527	1057	1091	0.0	1.3	3.877	A
	Exit	1	1		1014			1014	1032	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	566	1002	0.564	572	583	0.0	1.2	8.490	A
			2	A, B, C	266	1012	0.263	266	280	0.0	0.4	5.343	A
	Exit	1	1		548			548	558	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	741	1686	0.439	739	745	0.0	0.7	3.787	A
	Exit	1	1		1061			1061	1086	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	528	886	0.595	520	533	1.4	2.3	11.628	B
			2	A, C, D	116	886	0.130	114	117	0.2	0.3	4.626	A
	Exit	1	1		624			624	640	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1058	2002	0.528	1051	1071	1.3	1.5	3.882	A
	Exit	1	1		1011			1011	1054	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	570	1010	0.564	571	588	1.2	1.4	8.278	A
			2	A, B, C	276	1021	0.271	277	287	0.4	0.3	5.089	A
	Exit	1	1		566			566	571	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	731	1696	0.431	733	759	0.7	0.7	3.910	A
	Exit	1	1		1065			1065	1090	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	539	878	0.614	539	542	2.3	1.6	10.867	B
			2	A, C, D	111	884	0.125	112	110	0.3	0.1	4.958	A
	Exit	1	1		623			623	640	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1043	2006	0.520	1046	1063	1.5	0.8	3.890	A
	Exit	1	1		1045			1045	1063	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	575	1015	0.566	573	587	1.4	1.5	8.707	A
			2	A, B, C	274	1019	0.269	276	290	0.3	0.5	5.107	A
	Exit	1	1		564			564	575	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	753	1693	0.445	748	759	0.7	1.2	3.834	A
	Exit	1	1		1062			1062	1073	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	512	874	0.586	509	526	1.6	1.6	10.342	B
			2	A, C, D	114	874	0.131	114	110	0.1	0.2	4.840	A
	Exit	1	1		636			636	634	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1071	2006	0.534	1069	1073	0.8	1.2	3.781	A
	Exit	1	1		1025			1025	1055	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	578	995	0.581	579	591	1.5	1.3	8.648	A
			2	A, B, C	284	1005	0.283	283	294	0.5	0.5	5.132	A
	Exit	1	1		555			555	564	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	746	1682	0.444	747	756	1.2	0.8	3.914	A
	Exit	1	1		1085			1085	1099	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	543	880	0.618	546	541	1.6	1.5	10.631	B
			2	A, C, D	113	882	0.128	112	117	0.2	0.1	4.853	A
	Exit	1	1		648			648	654	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1071	2017	0.531	1072	1085	1.2	1.1	3.865	A
	Exit	1	1		1060			1060	1066	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	559	999	0.559	559	590	1.3	1.4	9.048	A
			2	A, B, C	286	1009	0.282	283	288	0.5	0.5	4.879	A
	Exit	1	1		552			552	566	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	732	1673	0.437	735	760	0.8	0.5	3.777	A
	Exit	1	1		1049			1049	1096	0.0	0.0	0.000	A

18:15 - 18:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Average throughput (PCU/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A - A12 (E)	Entry	1	1	B, C	529	887	0.596	528	527	1.5	1.6	10.031	B
			2	A, C, D	109	886	0.124	109	115	0.1	0.2	4.756	A
	Exit	1	1		632			632	638	0.0	0.0	0.000	A
B - Chelmsford Road	Entry	1	1	A, B, C, D	1053	2013	0.523	1059	1070	1.1	0.9	3.757	A
	Exit	1	1		1023			1023	1040	0.0	0.0	0.000	A
C - A12 (W)	Entry	1	1	A, D	578	1005	0.574	577	589	1.4	1.6	8.339	A
			2	A, B, C	266	1018	0.262	267	287	0.5	0.4	5.106	A
	Exit	1	1		557			557	572	0.0	0.0	0.000	A
D - Roman Road	Entry	1	1	A, B, C, D	737	1697	0.435	735	751	0.5	0.9	3.676	A
	Exit	1	1		1064			1064	1088	0.0	0.0	0.000	A