

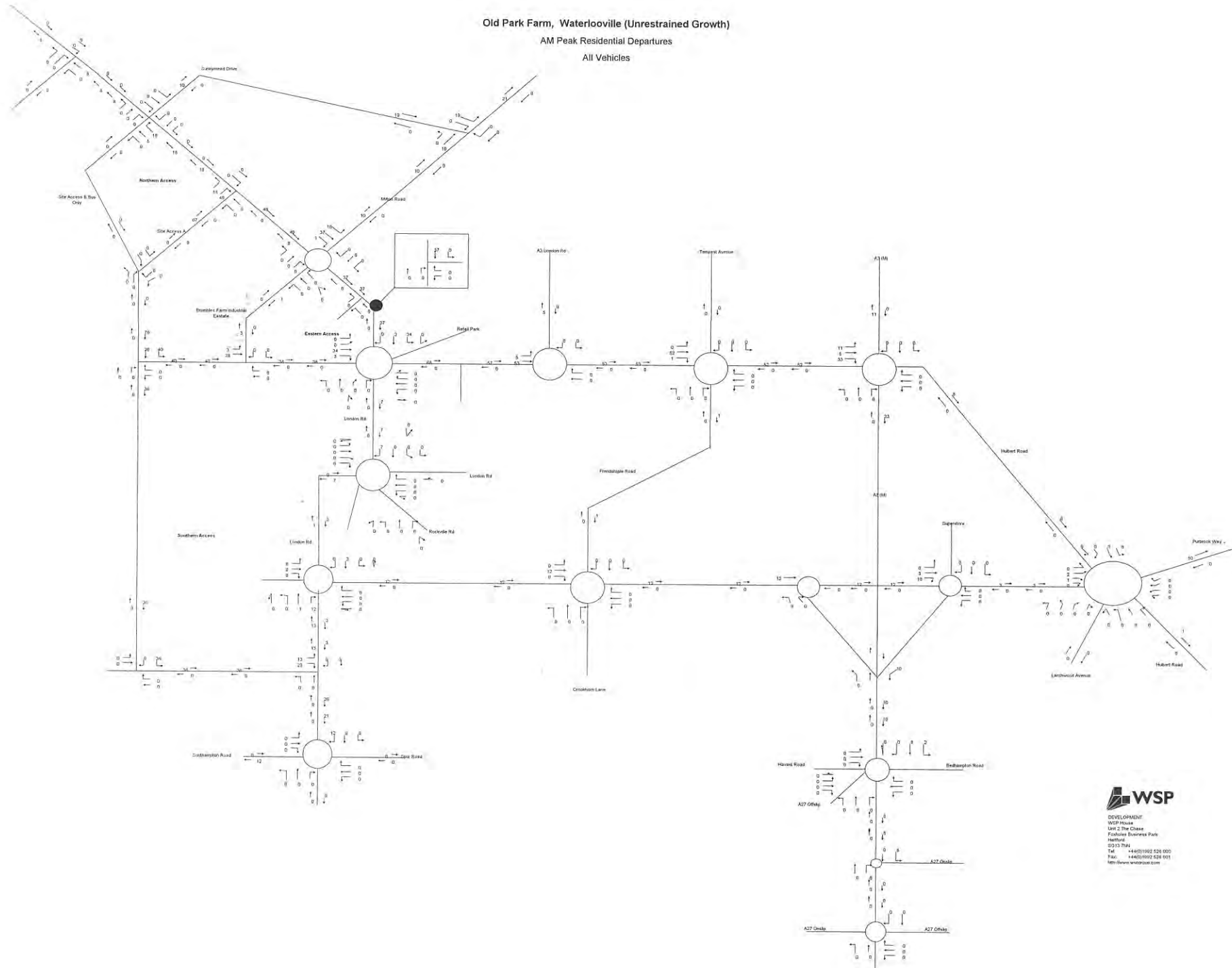


Appendix J

Old Park Farm, Waterloo (Unrestrained Growth)
AM Peak Residential Arrivals
All Vehicles

WSP
DEVELOPMENT
WSP House
Unit 2 The Chase
Farnham Business Park
Farnham
GU14 7BP
Tel +44(0)1962 526 020
Fax +44(0)1962 526 021
Info farnham@wsp.co.uk

Old Park Farm, Waterloooville (Unrestrained Growth)
AM Peak Residential Departures
All Vehicles



Light Vehicles





Old Park Farm, Watlooville (Unrestrained Growth)

AM Peak Employment Arrivals

Heavy Vehicles

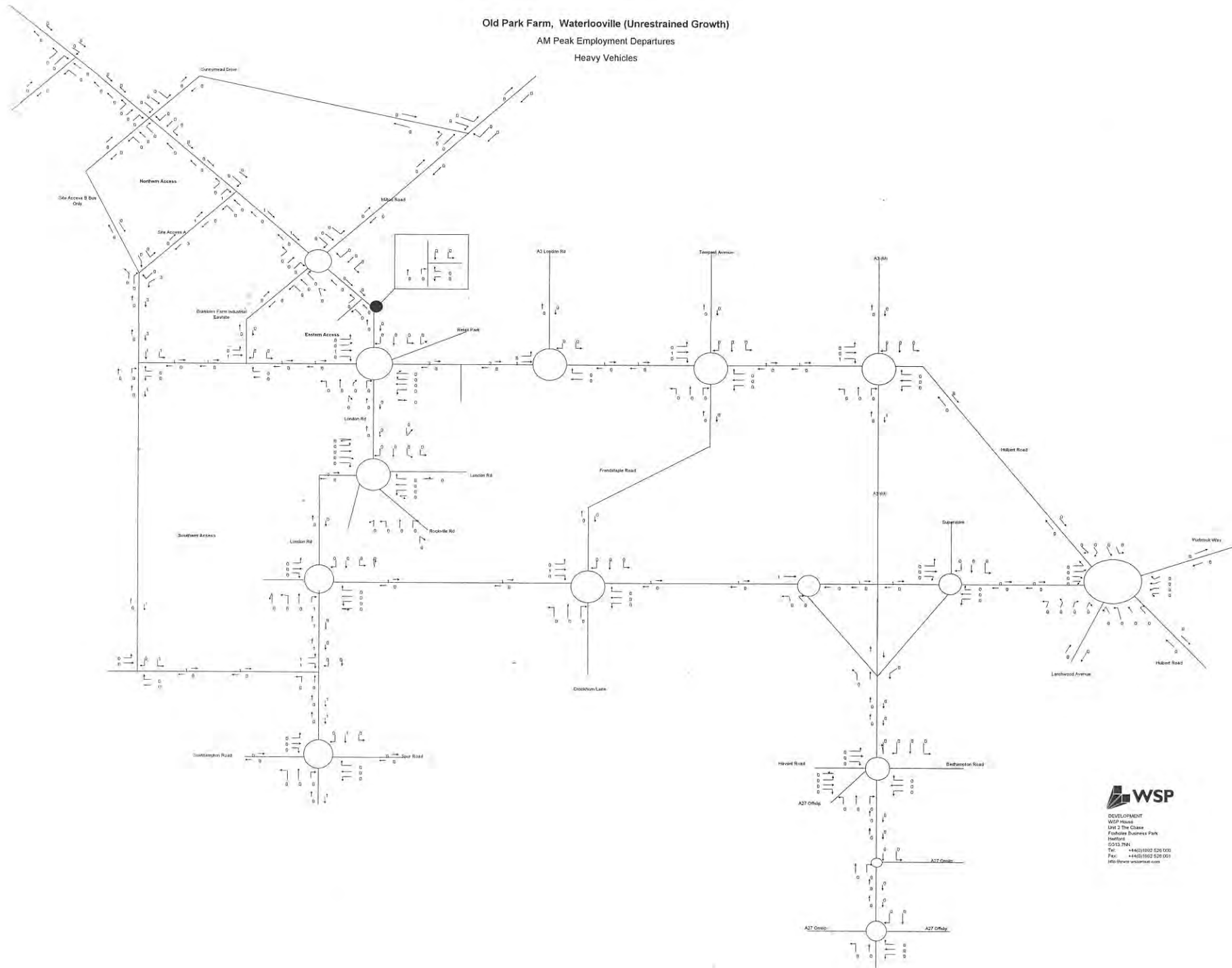
WSP

DEVELOPMENT
WSP House
Unit 2 The Chase
Fulham Business Park
Hertford
SG13 7NA
Tel: +44(0)1992 520 000
Fax: +44(0)1992 520 001
Info@wspgroup.co.uk



5

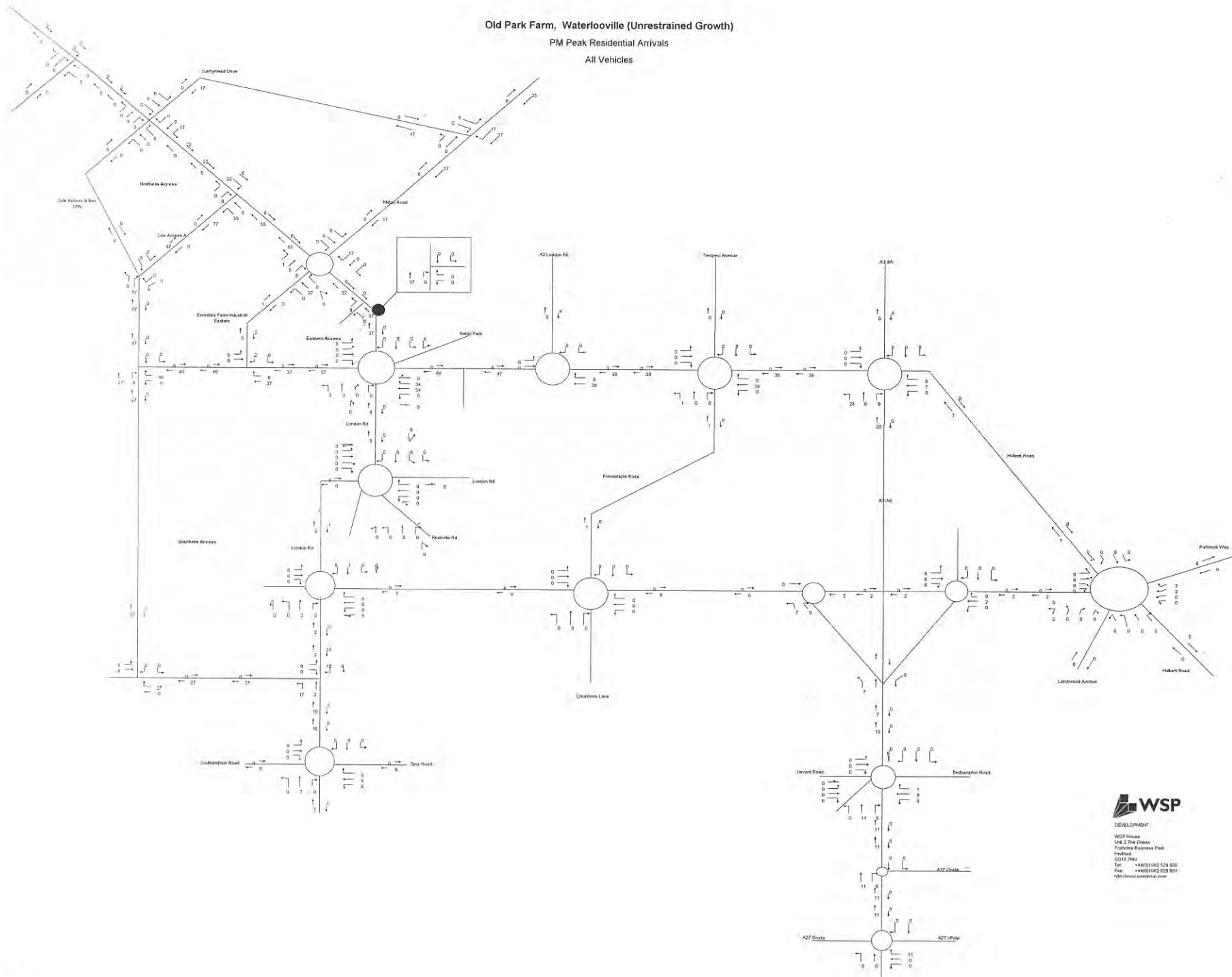
Old Park Farm, Watlooville (Unrestrained Growth)
AM Peak Employment Departures
Heavy Vehicles



Old Park Farm, Waterlooville (Unrestrained Growth)

PM Peak Residential Arrivals

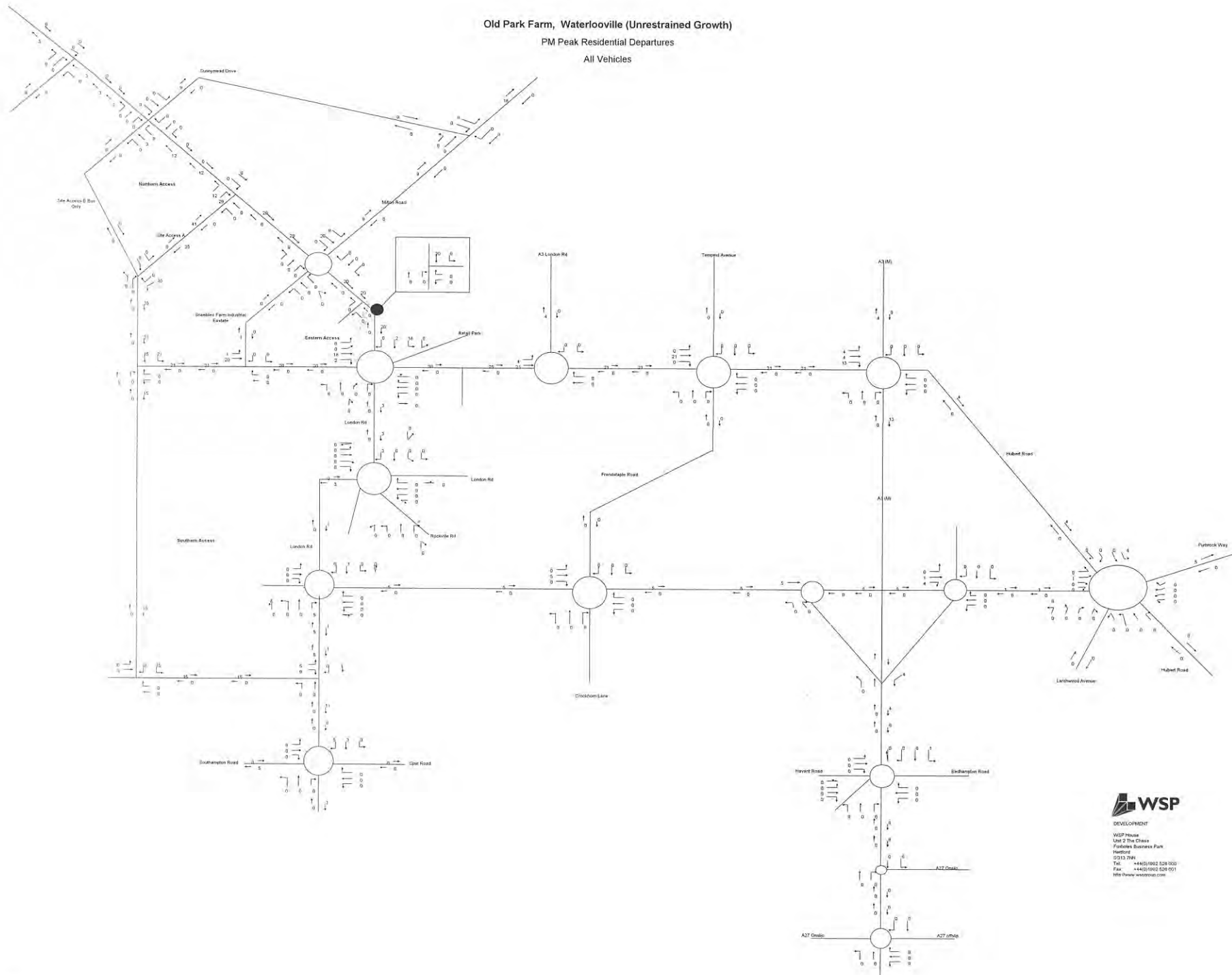
All Vehicles



Old Park Farm, Waterloooville (Unrestrained Growth)

PM Peak Residential Departures

All Vehicles



Old Park Farm, Waterloo (Unrestrained Growth)
PM Peak Employment Arrivals
Light Vehicles

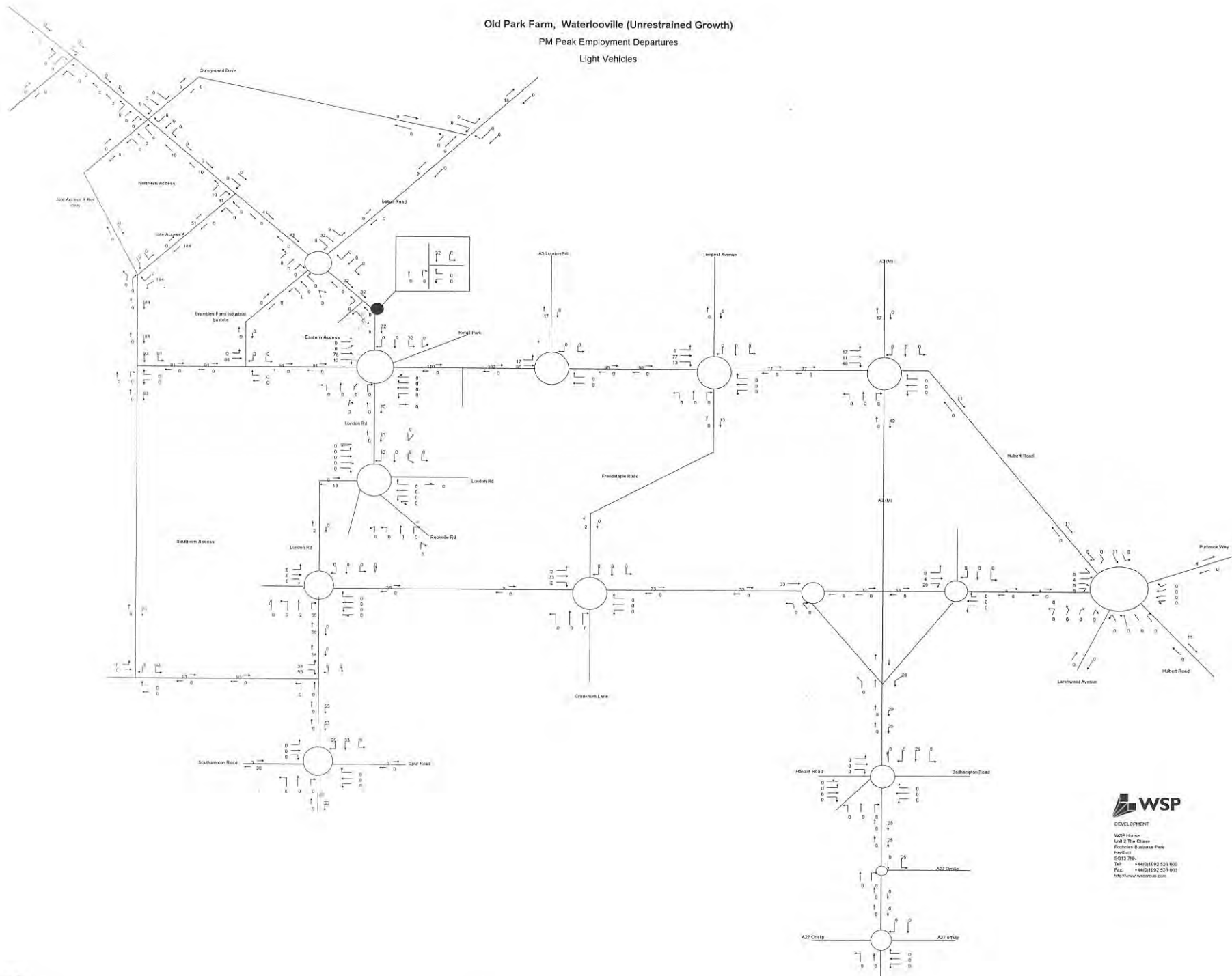
DEVELOPMENT
 WSP-Phase
 Unit 2 The Chase
 Farnham Business Park
 Farnham
 GU14 7PL
 Tel: +44(0)1982 524 600
 Fax: +44(0)1982 524 101
<http://www.wspgroup.co.uk>



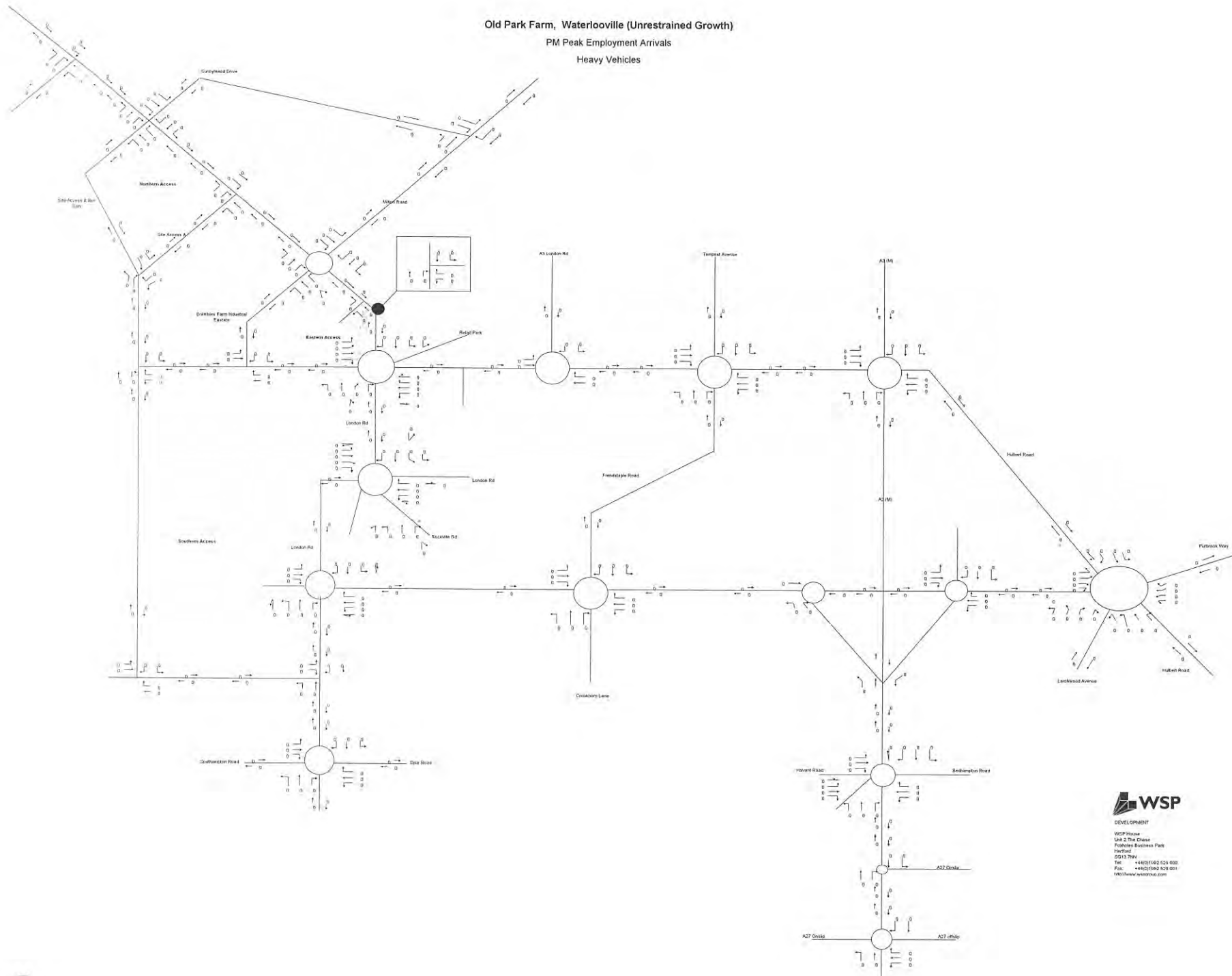
Old Park Farm, Waterloooville (Unrestrained Growth)

PM Peak Employment Departures

Light Vehicles



Old Park Farm, Waterlooville (Unrestrained Growth)
PM Peak Employment Arrivals
Heavy Vehicles



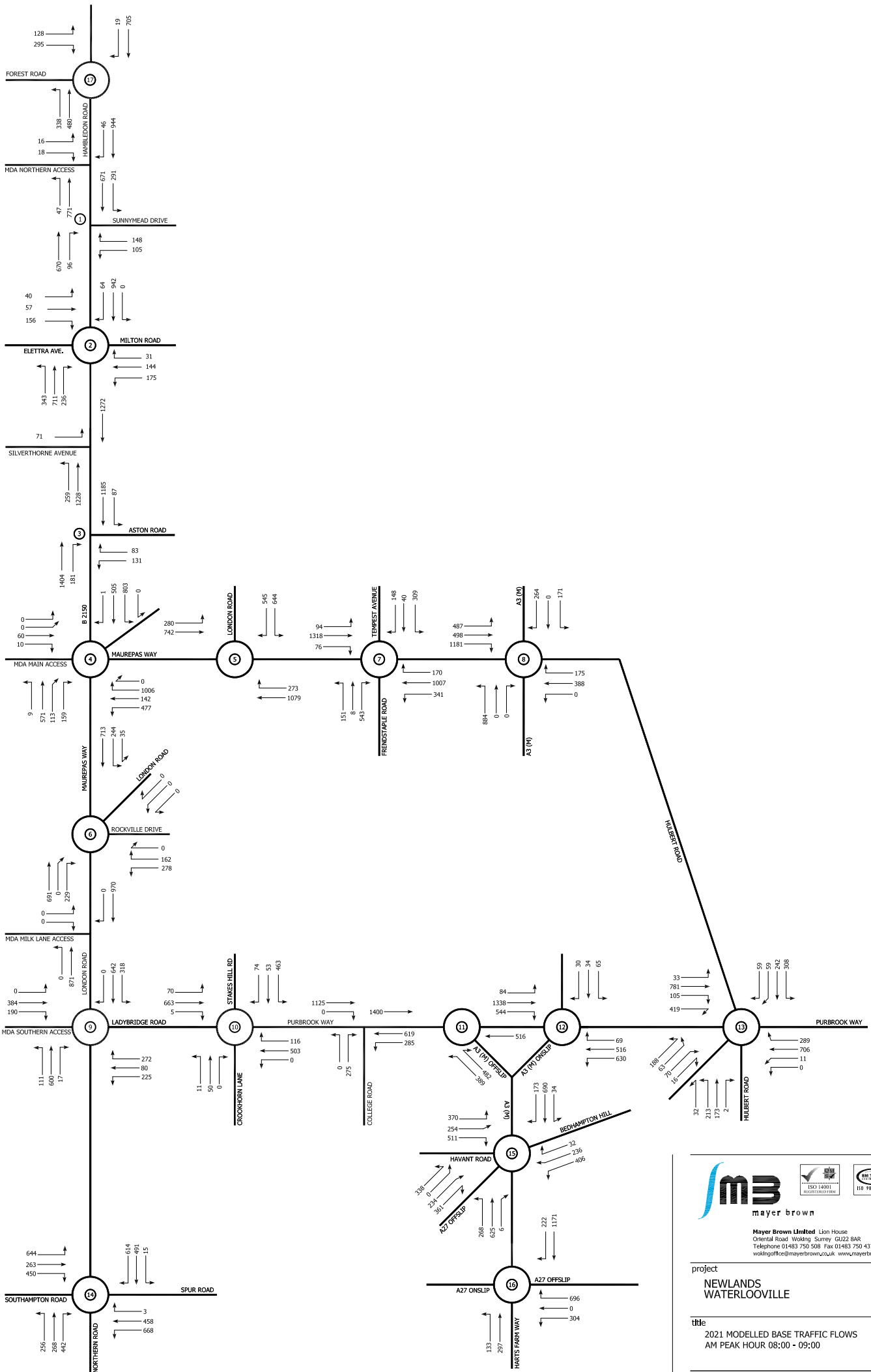
Old Park Farm, Waterloo (Unrestrained Growth)
PM Peak Employment Departures
Heavy Vehicles

Slingsmead Drive
Northern Access
Old Avenue
Bramble Farm Industrial Estate
Eastern Access
Rutger Park
A27 Link Rd
Forest Avenue
A3 Rd
Hubert Road
Luttrell Way
Larchwood Avenue
Hubert Road
A27 Overlap
A27 Underpass
A27 Overpass
Southwestern Road

WSP
DEVELOPMENT
WSP House
Unit 2 The Chase
Folkestone Business Park
Folkestone
5213 7941
Tel: +44(0)1302 526 000
Fax: +44(0)1302 526 001
http://www.wsp.co.uk



WCP House
Unit 2 The Chase
Foxholes Business Park
Hertford
SG13 7NH
Tel: +44(0)1992 526 000
Fax: +44(0)1992 526 001
Htt://www.wcpint.co.uk



TOTAL PCU'S = 123



Mayer Brown Limited Lion House
Oriental Road Woking Surrey GU22 8AR
Telephone 01483 750 508 Fax 01483 750 437
wokingoffice@mayerbrown.co.uk www.mayerbrown.co.uk



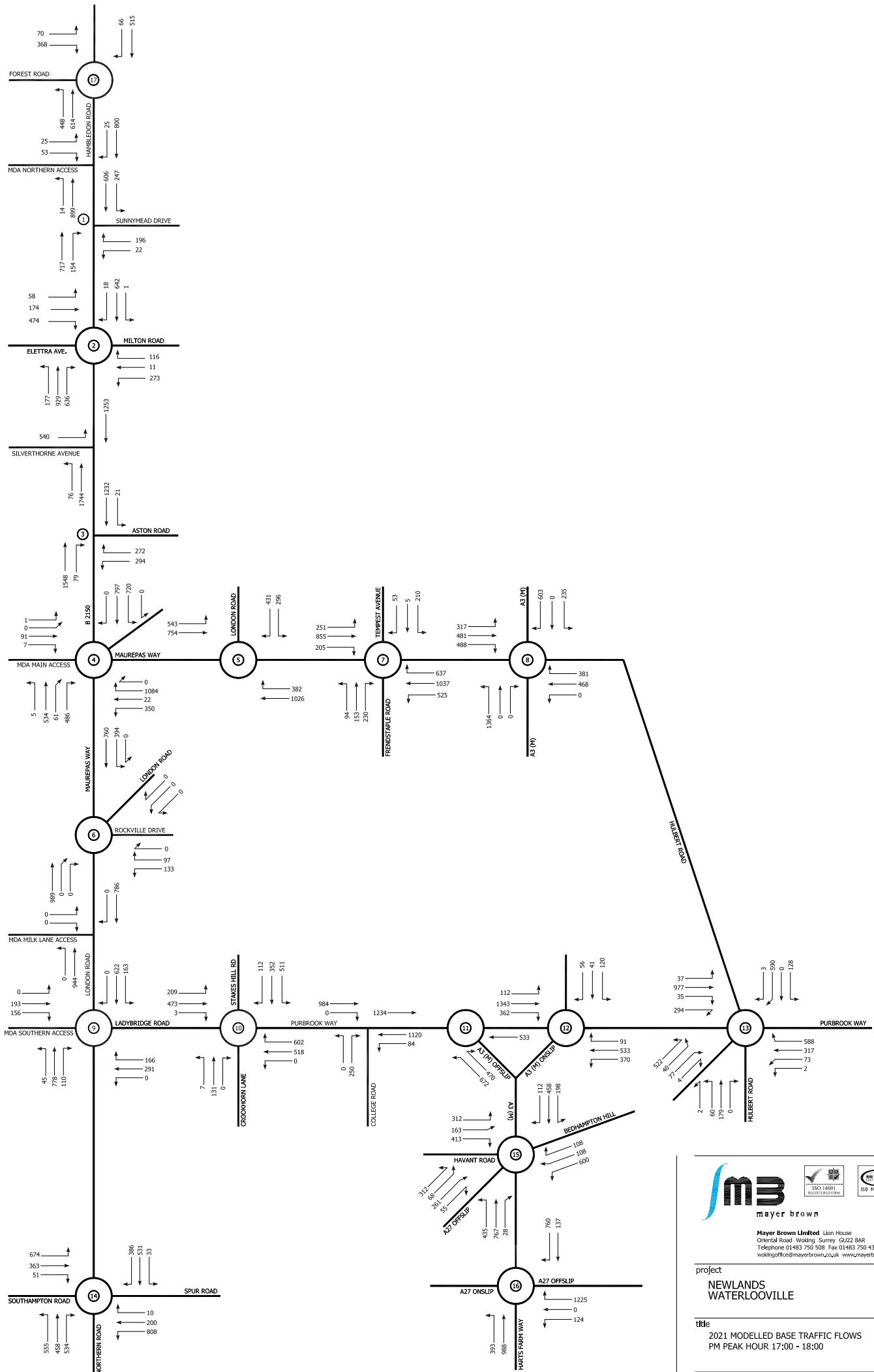
project
**NEWLANDS
WATERLOOVILLE**

title
2021 MODELLED BASE TRAFFIC FLOWS
AM PEAK HOUR 08:00 - 09:00

drawing number
GTWVILLE2/TF/0007

scale
NTS @ A3

rev.
PR02



TOTAL PCU'S = 123



Mayer Brown Limited Lion House
Oriental Road Woking Surrey GU22 8AR
Telephone 01483 750 508 Fax 01483 750 437
wokingoffice@mayerbrown.co.uk www.mayerbrown.co.uk

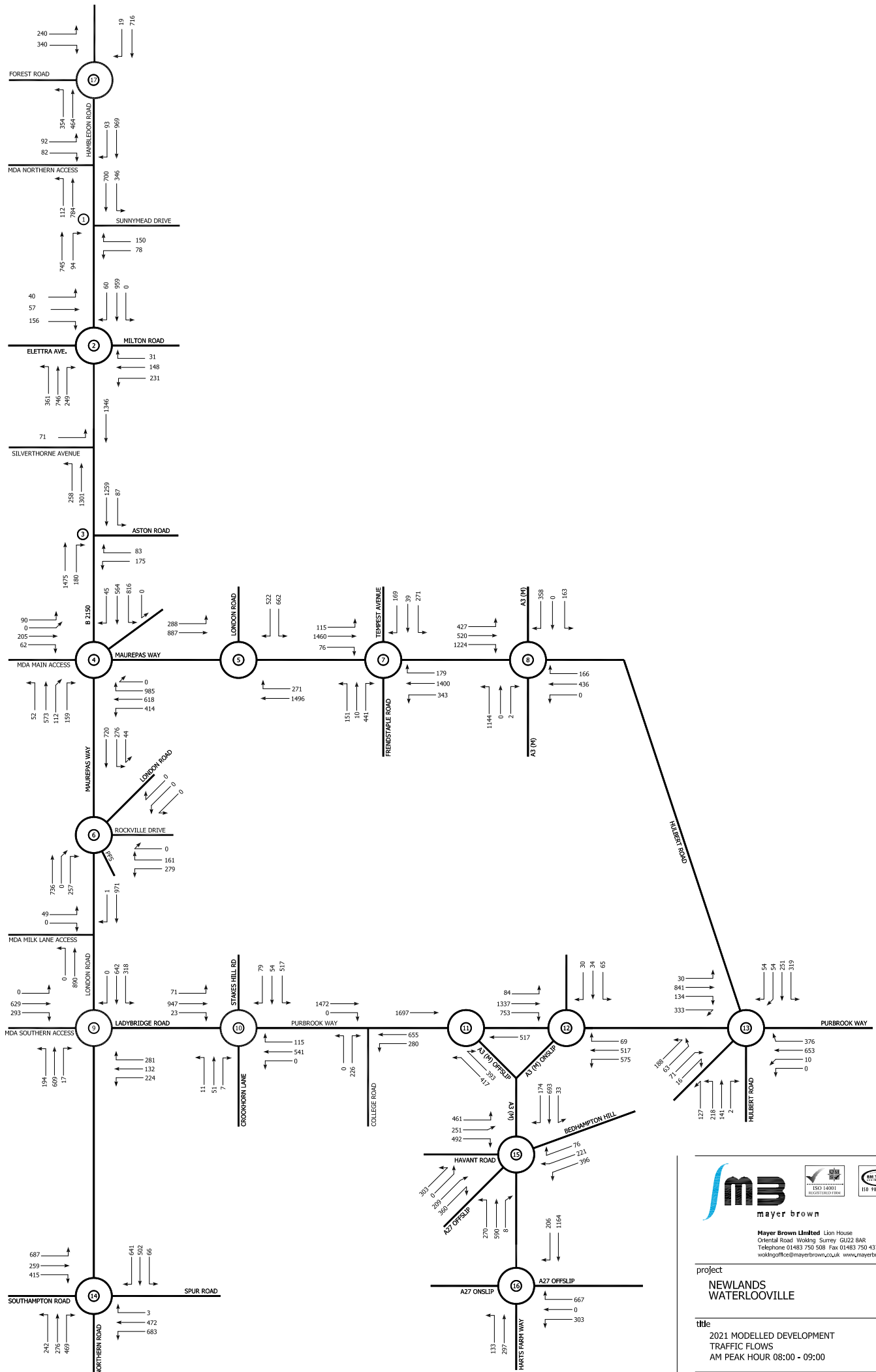
project
**NEWLANDS
WATERLOOVILLE**

title
2021 MODELLED BASE TRAFFIC FLOWS
PM PEAK HOUR 17:00 - 18:00

drawing number
GTWVILLE2/TF/0008

scale
NTS @ A3

rev.
PR02



TOTAL PCU'S = 123



Mayer Brown Limited Lion House
Oriental Road Woking Surrey GU22 8AR
Telephone 01483 750 508 Fax 01483 750 437
wokingoffice@mayerbrown.co.uk www.mayerbrown.co.uk

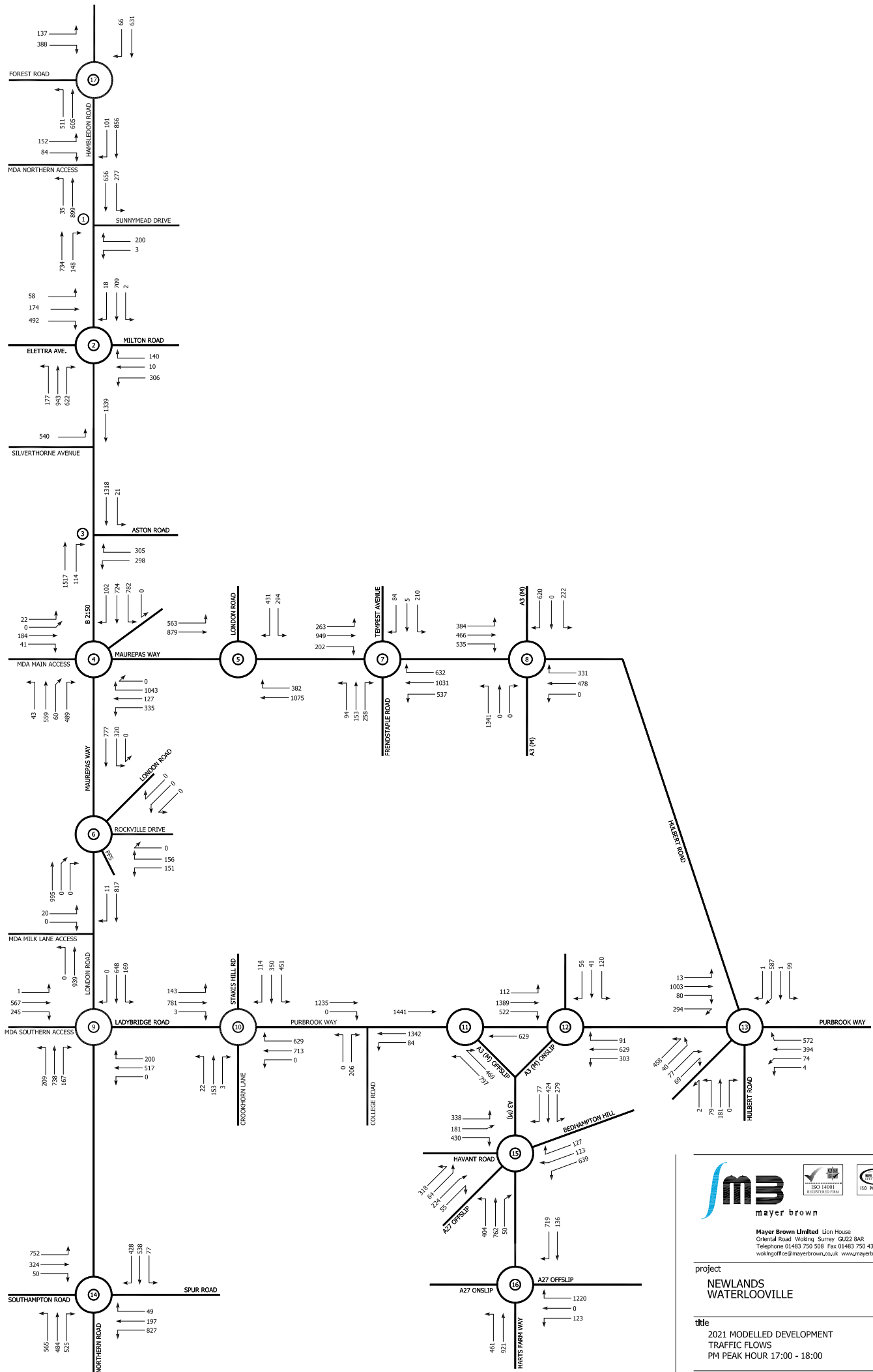
project
**NEWLANDS
WATERLOOVILLE**

title
2021 MODELLED DEVELOPMENT
TRAFFIC FLOWS
AM PEAK HOUR 08:00 - 09:00

drawing number
GTWVILLE2/TF/0009

scale
NTS @ A3

rev.
PR02



TOTAL PCU'S = 123



Mayer Brown Limited
Oriental Road Woking Surrey GU22 8AR
Telephone 01483 750 508 Fax 01483 750 437
wokingoffice@mayerbrown.co.uk www.mayerbrown.co.uk

project
NEWLANDS
WATERLOOVILLE

title
2021 MODELLED DEVELOPMENT
TRAFFIC FLOWS
PM PEAK HOUR 17:00 - 18:00

drawing number
GTWVILLE2/TF/0010

scale
NTS @ A3

rev.
PR02



Appendix K

Committed Development

North Site - West of Waterloo MDA

AM Peak Resi

	A	B	C	D
A		10	37	1
B	5			
C	12			
D				

AM Peak Resi - remaining

	A	B	C	D
A		2	6	0
B	1			
C	2			
D				

AM Peak Employ

	A	B	C	D
A		2	8	
B	11			
C	41			
D				

AM Peak Total Committed

	A	B	C	D
A		4	14	0
B	12			
C	43			
D				

PM Peak Resi

	A	B	C	D
A		9	20	
B	17			
C	37			
D	1			

PM Peak Resi - remaining

	A	B	C	D
A		2	3	
B	3			
C	6			
D	0			

PM Peak Employ

	A	B	C	D
A		9	32	
B	2			
C	7			
D				

PM Peak Total Committed

	A	B	C	D
A		11	35	
B	5			
C	13			
D	0			

A Hambledon R N
 B Milton R E
 C Hambledon R S
 D Elettra Av W

394 units occupied

474

83%

17%

Sat Total Committed

	A	B	C	D
A	0	2	3	0
B	3	0	0	0
C	6	0	0	0
D	0	0	0	0

Committed Development

South Site - West of Waterloo MDA

2021 AM Base

	A	B	C	D
A		0	942	64
B	31	0	175	144
C	711	236	0	343
D	40	57	156	0

2021 AM Base + Development

	A	B	C	D
A	0	0	959	60
B	31	0	231	148
C	746	249	0	361
D	40	57	156	0

AM Difference

	A	B	C	D
A	0	0	17	-4
B	0	0	56	4
C	35	13	0	18
D	0	0	0	0

AM peak Resi Trips

	A	B	C	D
A	0	0	11	0
B	0	0	35	3
C	22	8	0	11
D	0	0	0	0

AM peak Employ

	A	B	C	D
A	0	0	6	0
B	0	0	21	1
C	13	5	0	7
D	0	0	0	0

AM peak Resi remaining

	A	B	C	D
A	0	0	5	0
B	0	0	17	1
C	11	4	0	5
D	0	0	0	0

AM peak Committed Total

	A	B	C	D
A	0	0	11	0
B	0	0	38	3
C	24	9	0	12
D	0	0	0	0

2021 PM Base

	A	B	C	D
A		1	642	18
B	116	0	273	11
C	929	636	0	177
D	58	174	474	0

2011 PM Base + Development

	A	B	C	D
A		2	709	18
B	140		306	10
C	943	622		177
D	58	174	492	

PM Difference

	A	B	C	D
A	0	1	67	0
B	24	0	33	-1
C	14	-14	0	0
D	0	0	18	0

PM peak Resi Trips

	A	B	C	D
A	0	1	46	0
B	17	0	23	0
C	10	0	0	0
D	0	0	12	0

PM peak Employ

	A	B	C	D
A	0	0	21	0
B	7	0	10	0
C	4	0	0	0
D	0	0	6	0

PM peak Resi remaining

	A	B	C	D
A	0	0	22	0
B	8	0	11	0
C	5	0	0	0
D	0	0	6	0

PM peak Committed Total

	A	B	C	D
A	0	1	43	0
B	15	0	21	0
C	9	0	0	0
D	0	0	12	0

A Hambledon R N
B Milton R E
C Hambledon R S
D Elettra Av W

Residential site traffic - Table 7.5 TA

AM Peak	PM Peak
In Out	In Out
308 807	1115 762
424 1186	

Employ - Table 7.10 in TA

AM Peak	PM Peak
In Out	In Out
538 119	657 100
423 523	
1772	1709

319 units occupied
2650
1600 by 2023
1281 left
48%

Resi	63%	Resi	69%
Employ	37%	Employ	31%

Saturday flows assumed using TRICS factor

	In	Out	Total
12-1pm	0.211	0.237	0.448
PM Peak rate	0.396	0.231	0.627
			0.179
			29%
			71%

Sat Resi Trips

	A	B	C	D
A	0	0	16	0
B	6	0	8	0
C	3	0	0	0
D	0	0	4	0

AM peak Committed Total

	A	B	C	D
A	0	4	26	0
B	12	0	38	3
C	67	9	0	12
D	0	0	0	0

PM peak Committed Total

	A	B	C	D
A	0	11	78	0
B	20	0	21	0
C	22	0	0	0
D	0	0	12	0

Sat Committed Total

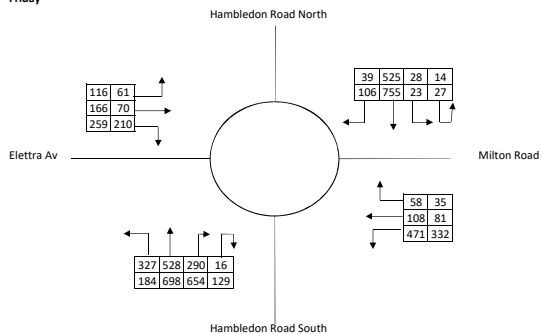
	A	B	C	D
A	0	2	19	0
B	9	0	8	0
C	10	0	0	0
D	0	0	4	0

A Hambledor
B Milton R E
C Hambledor
D Elettra Av \

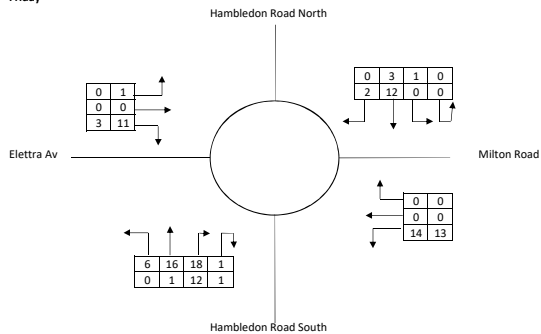


Appendix L

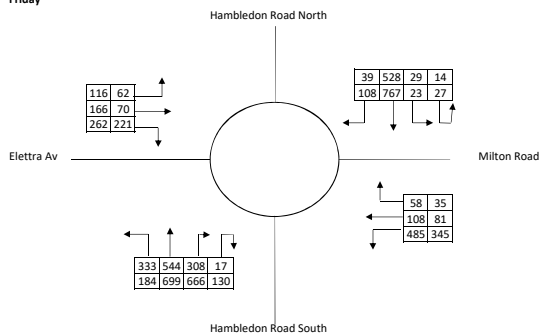
Junction Models - Hambledon Road/ Elettra Avenue Roundabout
2017 Observed Flows
Total Vehicles
Friday



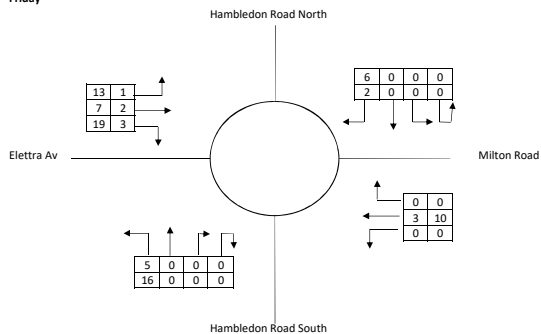
Heavies
Friday



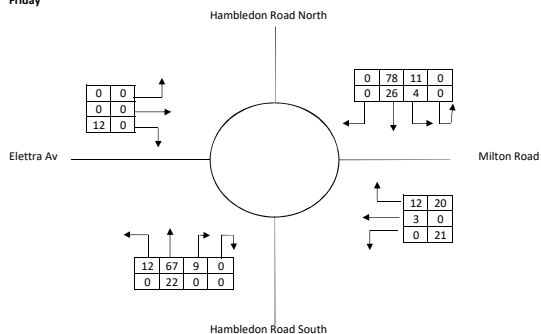
PCUs
Friday



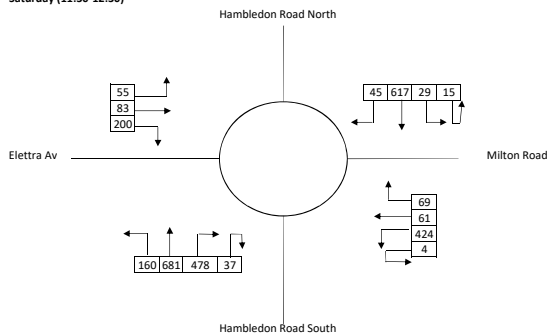
Committed - Lidl
Friday



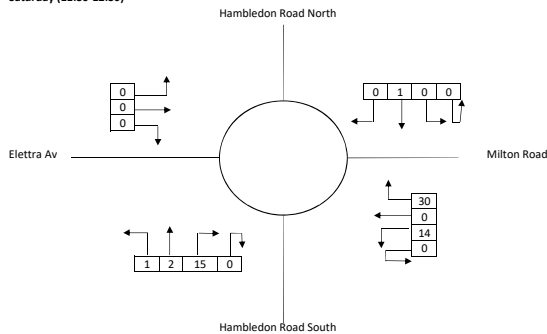
Committed - MDA
Friday



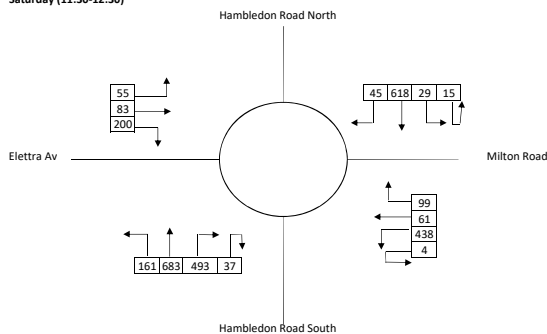
Saturday (11:30-12:30)



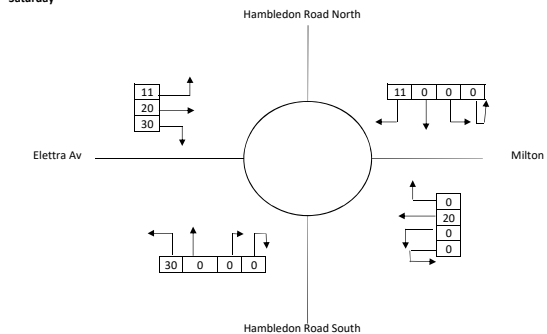
Saturday (11:30-12:30)



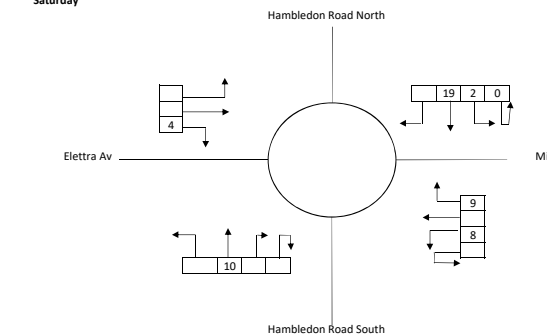
Saturday (11:30-12:30)



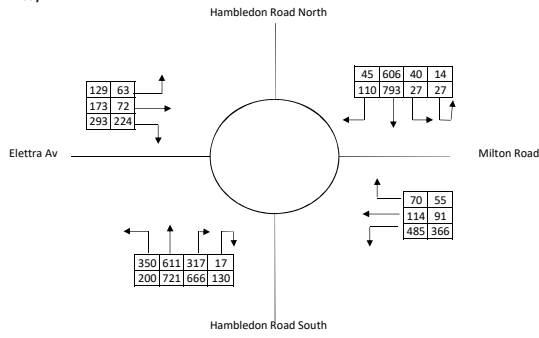
Committed - Lidl
Saturday



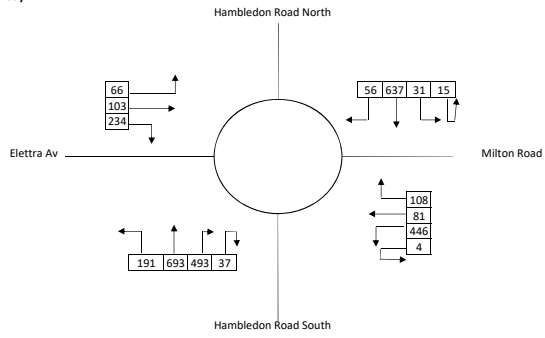
Committed - MDA
Saturday



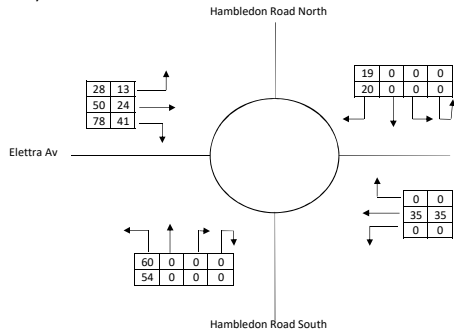
**2017 Base + Committed
Friday**



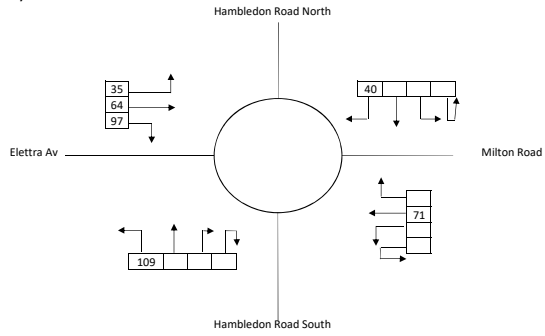
**2017 Base + Committed
Saturday**



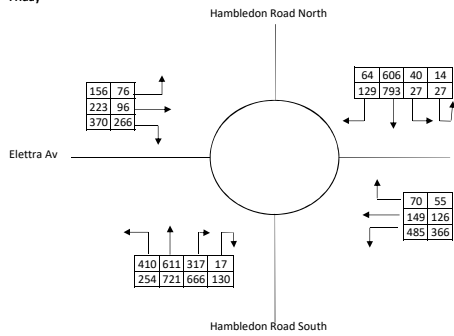
**Development Flows
Friday**



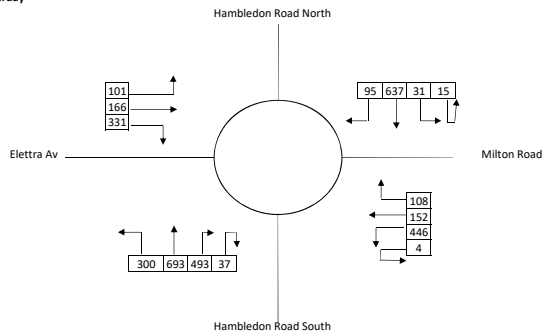
**Development Flows
Saturday**



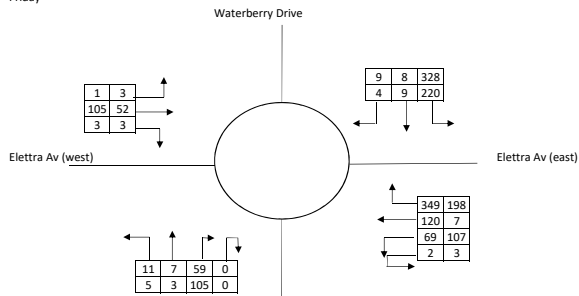
**2017 Base + Committed + Dev
Friday**



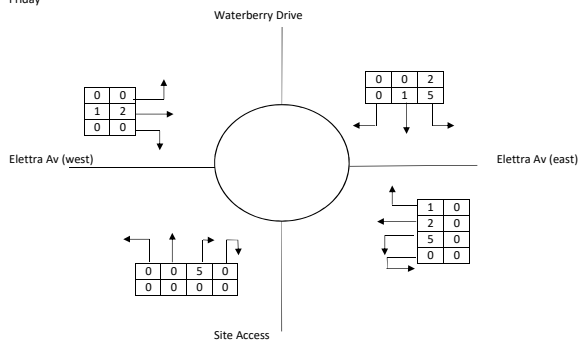
**2017 Base + Committed + Dev
Saturday**



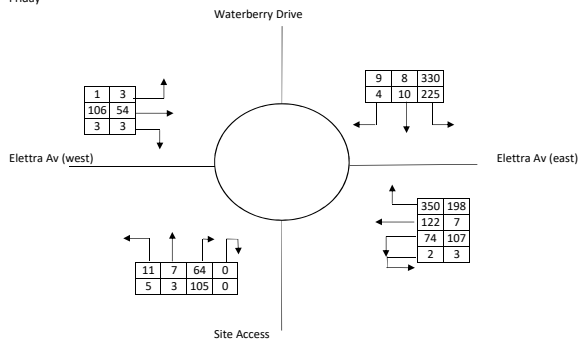
Junction Models - Site Access/ Elettra Avenue Roundabout
2017 Observed Flows
Total Vehicles
 Friday



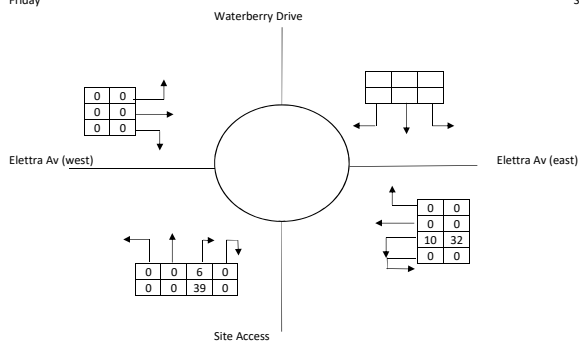
Heavies
Friday



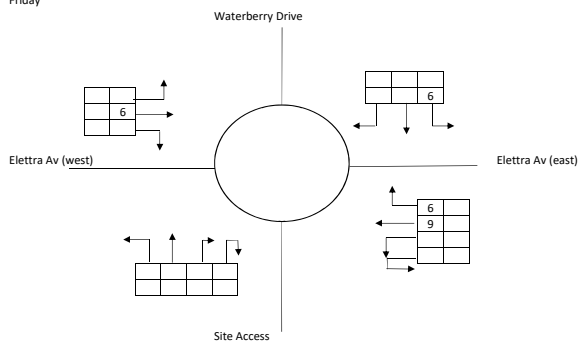
PCUs
Friday



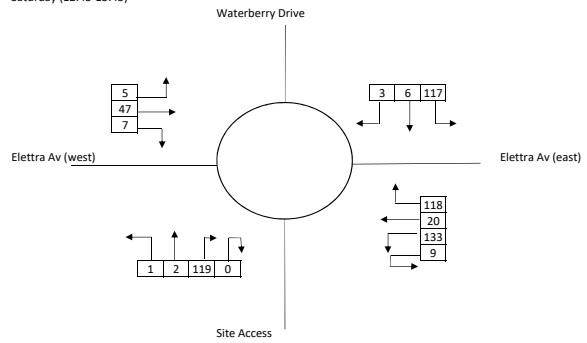
Committed - Lidl
Friday



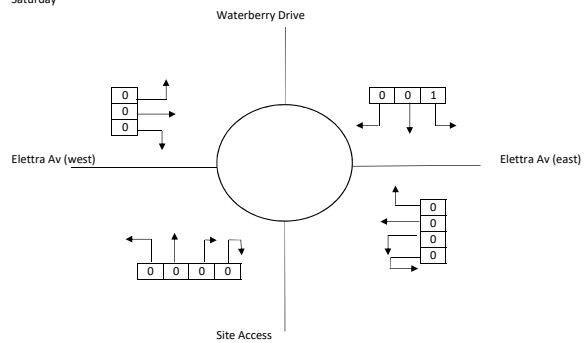
Committed - MDA
Friday



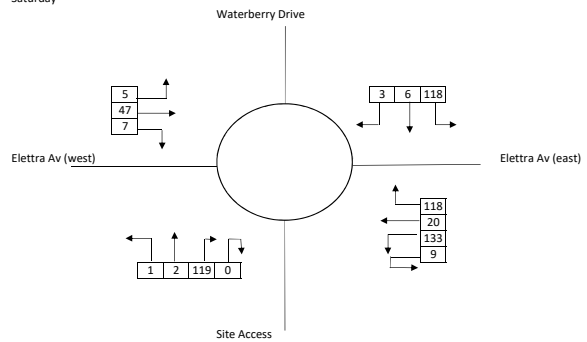
Saturday (12:45-13:45)



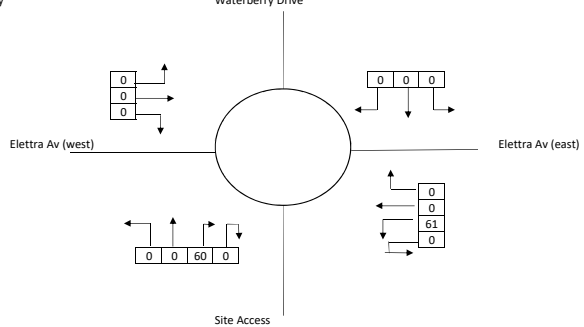
Saturday



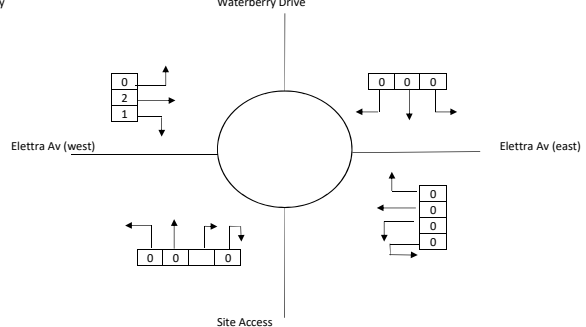
Saturday



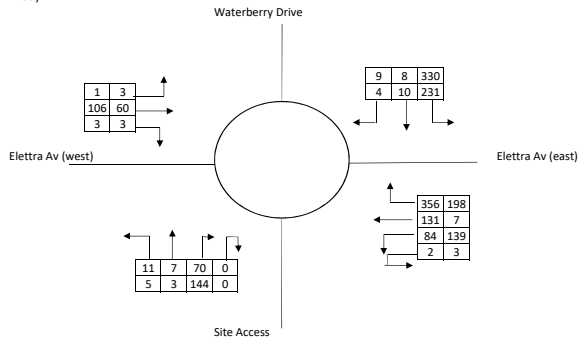
Committed - Lidl
Saturday



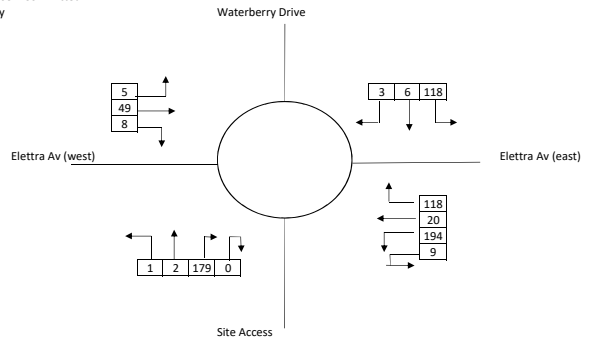
Committed - MDA
Saturday



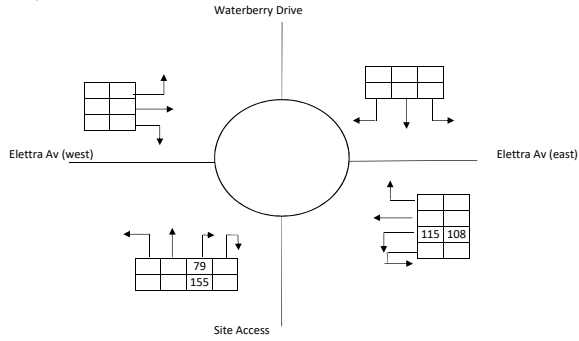
2017 Base + Committed
Friday



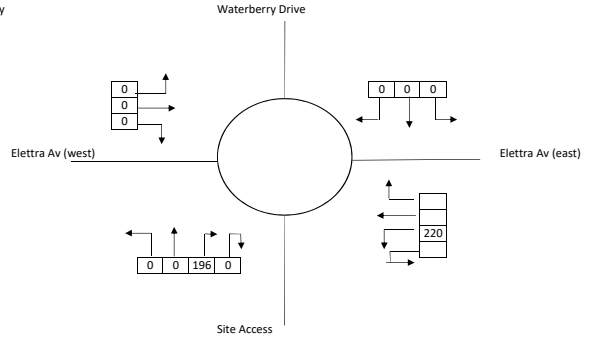
2017 Base + Committed
Saturday



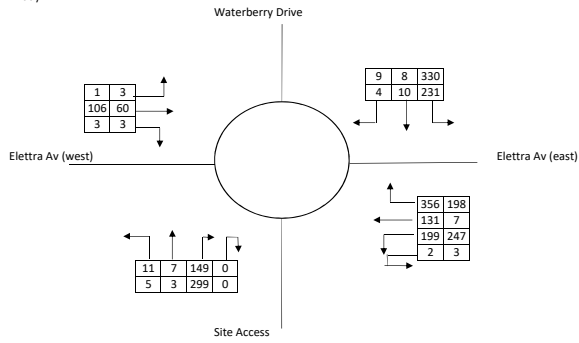
Development
Friday



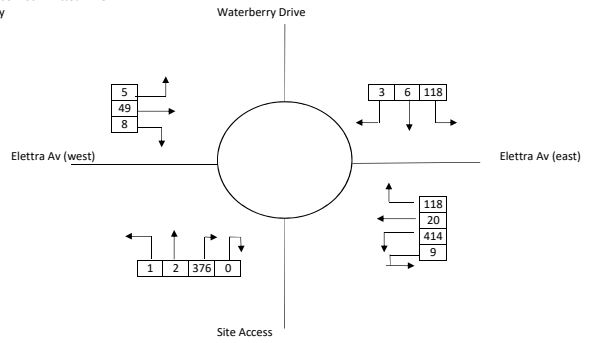
Development
Saturday



2017 Base + Committed + Dev
Friday



2017 Base + Committed + Dev
Saturday





Appendix M

Junctions 9			
ARCADY 9 - Roundabout Module			
Version: 9.0.2.5947 © Copyright TRL Limited, 2017			
For sales and distribution information, program advice and maintenance, contact TRL: +44 (0)1344 770558 software@trl.co.uk www.trlsoftware.co.uk			
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution			

Filename: Site Access_Elettra Avenue Roundabout_2018_RevA.j9

Path: P:\19000's\19235\Technical\Junction Modelling 2018

Report generation date: 22/10/2018 10:42:23

- »(Default Analysis Set) - 2023 Base , AM
- »(Default Analysis Set) - 2023 Base, PM
- »(Default Analysis Set) - 2023 Base + Dev, AM
- »(Default Analysis Set) - 2023 Base + Dev, PM
- »(Default Analysis Set) - 2023 Base , Sat
- »(Default Analysis Set) - 2023 Base + Dev, Sat

Summary of junction performance

	AM				PM				Sat			
	Q (PCU)	Delay (s)	RFC	LOS	Q (PCU)	Delay (s)	RFC	LOS	Q (PCU)	Delay (s)	RFC	LOS
A1 - 2023 Base												
1 - Elettra Av (east)	0.5	2.69	0.32	A	0.2	2.28	0.19	A	0.2	2.26	0.19	A
2 - Site Access	0.1	1.91	0.05	A	0.1	1.75	0.08	A	0.1	1.73	0.09	A
3 - Elettra Av (west)	0.0	2.35	0.04	A	0.1	2.26	0.07	A	0.0	2.14	0.04	A
4 - Waterberry Drive	0.2	2.49	0.15	A	0.3	2.74	0.22	A	0.1	2.31	0.08	A
A1 - 2023 Base + Dev												
1 - Elettra Av (east)	0.6	2.97	0.38	A	0.3	2.46	0.25	A	0.4	2.64	0.31	A
2 - Site Access	0.1	2.00	0.09	A	0.2	1.91	0.15	A	0.2	1.93	0.18	A
3 - Elettra Av (west)	0.0	2.44	0.05	A	0.1	2.45	0.08	A	0.0	2.35	0.04	A
4 - Waterberry Drive	0.2	2.59	0.16	A	0.3	3.02	0.24	A	0.1	2.54	0.09	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 Av. delay per arriving vehicle.

File summary

File Description

Title	Site Access_Elettra Avenue_Waterberry Drive
Location	waterlooville
Site number	
Date	14/06/2017
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	17144
Enumerator	DTA\arcady
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2023 Base	AM	ONE HOUR	07:45	09:15	15	✓
D6	2023 Base	PM	ONE HOUR	16:45	18:15	15	✓
D7	2023 Base + Dev	AM	ONE HOUR	07:45	09:15	15	✓
D8	2023 Base + Dev	PM	ONE HOUR	16:45	18:15	15	✓
D9	2023 Base	Sat	ONE HOUR	12:30	14:00	15	✓
D10	2023 Base + Dev	Sat	ONE HOUR	12:30	14:00	15	✓

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	(Default Analysis Set)	✓	100.000	100.000

(Default Analysis Set) - 2023 Base , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - Elettra Av (east) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Standard Roundabout	1, 2, 3, 4	2.55	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Elettra Av (east)	
2	Site Access	
3	Elettra Av (west)	
4	Waterberry Drive	

Roundabout Geometry

Arm	V (m)	E (m)	I' (m)	R (m)	D (m)	PHI (deg)	Exit only
1 - Elettra Av (east)	3.00	7.40	41.5	25.7	44.0	19.5	
2 - Site Access	6.20	9.10	11.1	19.5	44.0	24.0	
3 - Elettra Av (west)	3.60	7.30	27.9	28.5	44.0	15.5	
4 - Waterberry Drive	3.76	7.50	13.4	55.4	44.0	11.5	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Elettra Av (east)	0.703	1994
2 - Site Access	0.775	2403
3 - Elettra Av (west)	0.709	2000
4 - Waterberry Drive	0.699	1903

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2023 Base	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Elettra Av (east)		ONE HOUR	✓	573	100.000
2 - Site Access		ONE HOUR	✓	88	100.000
3 - Elettra Av (west)		ONE HOUR	✓	66	100.000
4 - Waterberry Drive		ONE HOUR	✓	245	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		1 - Elettra Av (east)	2 - Site Access	3 - Elettra Av (west)	4 - Waterberry Drive
From	1 - Elettra Av (east)	2	84	131	356
	2 - Site Access	70	0	11	7
	3 - Elettra Av (west)	60	3	0	3
	4 - Waterberry Drive	231	10	4	0

Vehicle Mix

HV %s

	To				
		1 - Elettra Av (east)	2 - Site Access	3 - Elettra Av (west)	4 - Waterberry Drive
From	1 - Elettra Av (east)	0	0	2	1
	2 - Site Access	0	0	0	0
	3 - Elettra Av (west)	4	0	0	0
	4 - Waterberry Drive	6	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Elettra Av (east)	0.32	2.69	0.5	A	526	789
2 - Site Access	0.05	1.91	0.1	A	81	121
3 - Elettra Av (west)	0.04	2.35	0.0	A	61	91
4 - Waterberry Drive	0.15	2.49	0.2	A	225	337

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	431	108	13	1986	0.217	430	273	0.0	0.3	2.339	A
2 - Site Access	66	17	370	2116	0.031	66	73	0.0	0.0	1.755	A
3 - Elettra Av (west)	50	12	327	1768	0.028	50	110	0.0	0.0	2.170	A
4 - Waterberry Drive	184	46	101	1832	0.101	184	275	0.0	0.1	2.307	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	515	129	15	1984	0.260	515	326	0.3	0.4	2.477	A
2 - Site Access	79	20	443	2059	0.038	79	87	0.0	0.0	1.816	A
3 - Elettra Av (west)	59	15	391	1723	0.034	59	131	0.0	0.0	2.242	A
4 - Waterberry Drive	220	55	121	1818	0.121	220	329	0.1	0.1	2.379	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	631	158	19	1981	0.318	630	399	0.4	0.5	2.693	A
2 - Site Access	97	24	542	1982	0.049	97	107	0.0	0.1	1.908	A
3 - Elettra Av (west)	73	18	479	1660	0.044	73	161	0.0	0.0	2.349	A
4 - Waterberry Drive	270	67	149	1799	0.150	270	403	0.1	0.2	2.486	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	631	158	19	1981	0.318	631	400	0.5	0.5	2.693	A
2 - Site Access	97	24	543	1982	0.049	97	107	0.1	0.1	1.908	A
3 - Elettra Av (west)	73	18	479	1660	0.044	73	161	0.0	0.0	2.349	A
4 - Waterberry Drive	270	67	149	1799	0.150	270	403	0.2	0.2	2.486	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	515	129	15	1984	0.260	516	327	0.5	0.4	2.480	A
2 - Site Access	79	20	444	2059	0.038	79	87	0.1	0.0	1.817	A
3 - Elettra Av (west)	59	15	391	1722	0.034	59	131	0.0	0.0	2.243	A
4 - Waterberry Drive	220	55	121	1818	0.121	220	329	0.2	0.1	2.380	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	431	108	13	1985	0.217	432	273	0.4	0.3	2.341	A
2 - Site Access	66	17	371	2115	0.031	66	73	0.0	0.0	1.759	A
3 - Elettra Av (west)	50	12	328	1767	0.028	50	110	0.0	0.0	2.171	A
4 - Waterberry Drive	184	46	102	1832	0.101	185	276	0.1	0.1	2.308	A

(Default Analysis Set) - 2023 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - Elettra Av (east) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Standard Roundabout	1, 2, 3, 4	2.36	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2023 Base	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Elettra Av (east)		ONE HOUR	✓	344	100.000
2 - Site Access		ONE HOUR	✓	152	100.000
3 - Elettra Av (west)		ONE HOUR	✓	110	100.000
4 - Waterberry Drive		ONE HOUR	✓	347	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1 - Elettra Av (east)	2 - Site Access	3 - Elettra Av (west)	4 - Waterberry Drive
	1 - Elettra Av (east)	0	139	7	198
	2 - Site Access	144	0	5	3
	3 - Elettra Av (west)	106	3	0	1
	4 - Waterberry Drive	330	8	9	0

Vehicle Mix

HV %s

	To				
From		1 - Elettra Av (east)	2 - Site Access	3 - Elettra Av (west)	4 - Waterberry Drive
	1 - Elettra Av (east)	0	0	7	2
	2 - Site Access	0	0	0	0
	3 - Elettra Av (west)	1	0	0	0
	4 - Waterberry Drive	1	0	0	0

Results

Results Summary for whole modelled period

Am	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Elettra Av (east)	0.19	2.28	0.2	A	316	473
2 - Site Access	0.08	1.75	0.1	A	139	209
3 - Elettra Av (west)	0.07	2.26	0.1	A	101	151
4 - Waterberry Drive	0.22	2.74	0.3	A	318	478

Main Results for each time segment

16:45 - 17:00

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	259	65	15	1984	0.131	258	436	0.0	0.2	2.113	A
2 - Site Access	114	29	161	2278	0.050	114	113	0.0	0.1	1.663	A
3 - Elettra Av (west)	83	21	259	1816	0.046	83	16	0.0	0.0	2.096	A
4 - Waterberry Drive	261	65	190	1770	0.148	261	152	0.0	0.2	2.406	A

17:00 - 17:15

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	309	77	18	1982	0.156	309	521	0.2	0.2	2.179	A
2 - Site Access	137	34	192	2254	0.061	137	135	0.1	0.1	1.699	A
3 - Elettra Av (west)	99	25	310	1780	0.056	99	19	0.0	0.1	2.161	A
4 - Waterberry Drive	312	78	227	1744	0.179	312	182	0.2	0.2	2.537	A

17:15 - 17:30

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	379	95	22	1979	0.191	379	638	0.2	0.2	2.277	A
2 - Site Access	167	42	235	2220	0.075	167	165	0.1	0.1	1.752	A
3 - Elettra Av (west)	121	30	380	1730	0.070	121	23	0.1	0.1	2.258	A
4 - Waterberry Drive	382	96	278	1708	0.224	382	222	0.2	0.3	2.740	A

17:30 - 17:45

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	379	95	22	1979	0.191	379	639	0.2	0.2	2.278	A
2 - Site Access	167	42	236	2220	0.075	167	165	0.1	0.1	1.752	A
3 - Elettra Av (west)	121	30	380	1730	0.070	121	23	0.1	0.1	2.258	A
4 - Waterberry Drive	382	96	279	1708	0.224	382	222	0.3	0.3	2.740	A

17:45 - 18:00

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	309	77	18	1982	0.156	309	522	0.2	0.2	2.180	A
2 - Site Access	137	34	193	2254	0.061	137	135	0.1	0.1	1.699	A
3 - Elettra Av (west)	99	25	310	1780	0.056	99	19	0.1	0.1	2.162	A
4 - Waterberry Drive	312	78	228	1744	0.179	312	182	0.3	0.2	2.540	A

18:00 - 18:15

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	259	65	15	1984	0.131	259	437	0.2	0.2	2.115	A
2 - Site Access	114	29	161	2278	0.050	114	113	0.1	0.1	1.665	A
3 - Elettra Av (west)	83	21	260	1815	0.046	83	16	0.1	0.0	2.099	A
4 - Waterberry Drive	261	65	191	1770	0.148	261	152	0.2	0.2	2.409	A

(Default Analysis Set) - 2023 Base + Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - Elettra Av (east) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Standard Roundabout	1, 2, 3, 4	2.72	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

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

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Elettra Av (east)		ONE HOUR	✓	688	100.000
2 - Site Access		ONE HOUR	✓	167	100.000
3 - Elettra Av (west)		ONE HOUR	✓	66	100.000
4 - Waterberry Drive		ONE HOUR	✓	245	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1 - Elettra Av (east)	2 - Site Access	3 - Elettra Av (west)	4 - Waterberry Drive
	1 - Elettra Av (east)	2	199	131	356
	2 - Site Access	149	0	11	7
	3 - Elettra Av (west)	60	3	0	3
	4 - Waterberry Drive	231	10	4	0

Vehicle Mix

HV %s

	To				
From		1 - Elettra Av (east)	2 - Site Access	3 - Elettra Av (west)	4 - Waterberry Drive
	1 - Elettra Av (east)	0	0	2	1
	2 - Site Access	0	0	0	0
	3 - Elettra Av (west)	4	0	0	0
	4 - Waterberry Drive	6	0	0	0

Results

Results Summary for whole modelled period

Am	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Elettra Av (east)	0.38	2.97	0.6	A	631	947
2 - Site Access	0.09	2.00	0.1	A	153	230
3 - Elettra Av (west)	0.05	2.44	0.0	A	61	91
4 - Waterberry Drive	0.16	2.59	0.2	A	225	337

Main Results for each time segment

07:45 - 08:00

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	518	129	13	1986	0.261	517	332	0.0	0.4	2.470	A
2 - Site Access	126	31	370	2116	0.059	125	159	0.0	0.1	1.807	A
3 - Elettra Av (west)	50	12	386	1726	0.029	50	110	0.0	0.0	2.225	A
4 - Waterberry Drive	184	46	161	1790	0.103	184	275	0.0	0.1	2.367	A

08:00 - 08:15

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	618	155	15	1984	0.312	618	397	0.4	0.5	2.659	A
2 - Site Access	150	38	443	2060	0.073	150	190	0.1	0.1	1.884	A
3 - Elettra Av (west)	59	15	462	1672	0.035	59	131	0.0	0.0	2.312	A
4 - Waterberry Drive	220	55	192	1768	0.125	220	329	0.1	0.1	2.456	A

08:15 - 08:30

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	758	189	19	1981	0.382	757	486	0.5	0.6	2.964	A
2 - Site Access	184	46	542	1982	0.093	184	233	0.1	0.1	2.001	A
3 - Elettra Av (west)	73	18	565	1599	0.045	73	161	0.0	0.0	2.444	A
4 - Waterberry Drive	270	67	235	1738	0.155	270	403	0.1	0.2	2.589	A

08:30 - 08:45

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	758	189	19	1981	0.382	757	487	0.6	0.6	2.967	A
2 - Site Access	184	46	543	1982	0.093	184	233	0.1	0.1	2.001	A
3 - Elettra Av (west)	73	18	566	1598	0.045	73	161	0.0	0.0	2.444	A
4 - Waterberry Drive	270	67	236	1738	0.155	270	403	0.2	0.2	2.589	A

08:45 - 09:00

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	618	155	15	1984	0.312	619	398	0.6	0.5	2.662	A
2 - Site Access	150	38	444	2059	0.073	150	191	0.1	0.1	1.885	A
3 - Elettra Av (west)	59	15	463	1672	0.035	59	131	0.0	0.0	2.313	A
4 - Waterberry Drive	220	55	193	1768	0.125	220	329	0.2	0.2	2.458	A

09:00 - 09:15

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	518	129	13	1985	0.261	518	333	0.5	0.4	2.477	A
2 - Site Access	126	31	371	2115	0.059	126	160	0.1	0.1	1.811	A
3 - Elettra Av (west)	50	12	387	1725	0.029	50	110	0.0	0.0	2.228	A
4 - Waterberry Drive	184	46	161	1790	0.103	185	276	0.2	0.1	2.368	A

(Default Analysis Set) - 2023 Base + Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - Elettra Av (east) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Standard Roundabout	1, 2, 3, 4	2.48	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

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

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Elettra Av (east)		ONE HOUR	✓	455	100.000
2 - Site Access		ONE HOUR	✓	307	100.000
3 - Elettra Av (west)		ONE HOUR	✓	110	100.000
4 - Waterberry Drive		ONE HOUR	✓	347	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1 - Elettra Av (east)	2 - Site Access	3 - Elettra Av (west)	4 - Waterberry Drive
	1 - Elettra Av (east)	3	247	7	198
	2 - Site Access	299	0	5	3
	3 - Elettra Av (west)	106	3	0	1
	4 - Waterberry Drive	330	8	9	0

Vehicle Mix

HV %s

	To				
From		1 - Elettra Av (east)	2 - Site Access	3 - Elettra Av (west)	4 - Waterberry Drive
	1 - Elettra Av (east)	0	0	7	2
	2 - Site Access	0	0	0	0
	3 - Elettra Av (west)	1	0	0	0
	4 - Waterberry Drive	1	0	0	0

Results

Results Summary for whole modelled period

Am	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Elettra Av (east)	0.25	2.46	0.3	A	418	626
2 - Site Access	0.15	1.91	0.2	A	282	423
3 - Elettra Av (west)	0.08	2.45	0.1	A	101	151
4 - Waterberry Drive	0.24	3.02	0.3	A	318	478

Main Results for each time segment

16:45 - 17:00

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	343	86	15	1984	0.173	342	554	0.0	0.2	2.212	A
2 - Site Access	231	58	163	2276	0.102	231	194	0.0	0.1	1.759	A
3 - Elettra Av (west)	83	21	378	1732	0.048	83	16	0.0	0.1	2.203	A
4 - Waterberry Drive	261	65	309	1687	0.155	261	152	0.0	0.2	2.546	A

17:00 - 17:15

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	409	102	18	1982	0.206	409	663	0.2	0.3	2.310	A
2 - Site Access	276	69	195	2252	0.123	276	232	0.1	0.1	1.821	A
3 - Elettra Av (west)	99	25	452	1679	0.059	99	19	0.1	0.1	2.299	A
4 - Waterberry Drive	312	78	369	1645	0.190	312	182	0.2	0.2	2.726	A

17:15 - 17:30

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	501	125	22	1979	0.253	501	812	0.3	0.3	2.458	A
2 - Site Access	338	85	239	2218	0.152	338	284	0.1	0.2	1.914	A
3 - Elettra Av (west)	121	30	554	1607	0.075	121	23	0.1	0.1	2.445	A
4 - Waterberry Drive	382	96	452	1587	0.241	382	222	0.2	0.3	3.016	A

17:30 - 17:45

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	501	125	22	1979	0.253	501	813	0.3	0.3	2.458	A
2 - Site Access	338	85	239	2218	0.152	338	284	0.2	0.2	1.914	A
3 - Elettra Av (west)	121	30	554	1607	0.075	121	23	0.1	0.1	2.445	A
4 - Waterberry Drive	382	96	453	1586	0.241	382	222	0.3	0.3	3.016	A

17:45 - 18:00

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	409	102	18	1982	0.206	409	664	0.3	0.3	2.313	A
2 - Site Access	276	69	195	2251	0.123	276	232	0.2	0.1	1.824	A
3 - Elettra Av (west)	99	25	452	1679	0.059	99	19	0.1	0.1	2.302	A
4 - Waterberry Drive	312	78	370	1644	0.190	312	182	0.3	0.2	2.728	A

18:00 - 18:15

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	343	86	15	1984	0.173	343	556	0.3	0.2	2.216	A
2 - Site Access	231	58	163	2276	0.102	231	194	0.1	0.1	1.762	A
3 - Elettra Av (west)	83	21	379	1731	0.048	83	16	0.1	0.1	2.206	A
4 - Waterberry Drive	261	65	310	1686	0.155	261	152	0.2	0.2	2.552	A

(Default Analysis Set) - 2023 Base , Sat

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - Elettra Av (east) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Standard Roundabout	1, 2, 3, 4	2.13	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2023 Base	Sat	ONE HOUR	12:30	14:00	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	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Elettra Av (east)		ONE HOUR	✓	341	100.000
2 - Site Access		ONE HOUR	✓	182	100.000
3 - Elettra Av (west)		ONE HOUR	✓	62	100.000
4 - Waterberry Drive		ONE HOUR	✓	127	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1 - Elettra Av (east)	2 - Site Access	3 - Elettra Av (west)	4 - Waterberry Drive
	1 - Elettra Av (east)	9	194	20	118
	2 - Site Access	179	0	1	2
	3 - Elettra Av (west)	49	8	0	5
	4 - Waterberry Drive	118	6	3	0

Vehicle Mix

HV %s

	To				
From		1 - Elettra Av (east)	2 - Site Access	3 - Elettra Av (west)	4 - Waterberry Drive
	1 - Elettra Av (east)	0	0	7	2
	2 - Site Access	0	0	0	0
	3 - Elettra Av (west)	1	0	0	0
	4 - Waterberry Drive	1	0	0	0

Results

Results Summary for whole modelled period

Am	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Elettra Av (east)	0.19	2.26	0.2	A	313	469
2 - Site Access	0.09	1.73	0.1	A	167	251
3 - Elettra Av (west)	0.04	2.14	0.0	A	57	85
4 - Waterberry Drive	0.08	2.31	0.1	A	117	175

Main Results for each time segment

12:30 - 12:45

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	257	64	13	1986	0.129	256	267	0.0	0.1	2.104	A
2 - Site Access	137	34	113	2315	0.059	137	156	0.0	0.1	1.651	A
3 - Elettra Av (west)	47	12	231	1836	0.025	47	18	0.0	0.0	2.027	A
4 - Waterberry Drive	96	24	184	1774	0.054	95	94	0.0	0.1	2.164	A

12:45 - 13:00

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	307	77	15	1984	0.155	306	319	0.1	0.2	2.169	A
2 - Site Access	164	41	135	2298	0.071	164	187	0.1	0.1	1.685	A
3 - Elettra Av (west)	56	14	277	1803	0.031	56	22	0.0	0.0	2.075	A
4 - Waterberry Drive	114	29	220	1749	0.065	114	112	0.1	0.1	2.222	A

13:00 - 13:15

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	375	94	19	1981	0.189	375	391	0.2	0.2	2.265	A
2 - Site Access	200	50	165	2275	0.088	200	229	0.1	0.1	1.734	A
3 - Elettra Av (west)	68	17	339	1759	0.039	68	26	0.0	0.0	2.145	A
4 - Waterberry Drive	140	35	270	1714	0.082	140	138	0.1	0.1	2.307	A

13:15 - 13:30

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	375	94	19	1981	0.189	375	391	0.2	0.2	2.265	A
2 - Site Access	200	50	165	2275	0.088	200	229	0.1	0.1	1.734	A
3 - Elettra Av (west)	68	17	339	1759	0.039	68	26	0.0	0.0	2.145	A
4 - Waterberry Drive	140	35	270	1714	0.082	140	138	0.1	0.1	2.307	A

13:30 - 13:45

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	307	77	15	1984	0.155	307	319	0.2	0.2	2.169	A
2 - Site Access	164	41	135	2298	0.071	164	187	0.1	0.1	1.685	A
3 - Elettra Av (west)	56	14	277	1803	0.031	56	22	0.0	0.0	2.076	A
4 - Waterberry Drive	114	29	220	1749	0.065	114	112	0.1	0.1	2.222	A

13:45 - 14:00

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	257	64	13	1985	0.129	257	267	0.2	0.2	2.106	A
2 - Site Access	137	34	113	2315	0.059	137	157	0.1	0.1	1.654	A
3 - Elettra Av (west)	47	12	232	1835	0.025	47	18	0.0	0.0	2.028	A
4 - Waterberry Drive	96	24	185	1774	0.054	96	94	0.1	0.1	2.166	A

(Default Analysis Set) - 2023 Base + Dev, Sat

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	1 - Elettra Av (east) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Standard Roundabout	1, 2, 3, 4	2.37	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2023 Base + Dev	Sat	ONE HOUR	12:30	14:00	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	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Elettra Av (east)		ONE HOUR	✓	552	100.000
2 - Site Access		ONE HOUR	✓	379	100.000
3 - Elettra Av (west)		ONE HOUR	✓	62	100.000
4 - Waterberry Drive		ONE HOUR	✓	127	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1 - Elettra Av (east)	2 - Site Access	3 - Elettra Av (west)	4 - Waterberry Drive
	1 - Elettra Av (east)	0	414	20	118
	2 - Site Access	376	0	1	2
	3 - Elettra Av (west)	49	8	0	5
	4 - Waterberry Drive	118	6	3	0

Vehicle Mix

HV %s

	To				
From		1 - Elettra Av (east)	2 - Site Access	3 - Elettra Av (west)	4 - Waterberry Drive
	1 - Elettra Av (east)	0	0	7	2
	2 - Site Access	0	0	0	0
	3 - Elettra Av (west)	1	0	0	0
	4 - Waterberry Drive	1	0	0	0

Results

Results Summary for whole modelled period

Am	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Elettra Av (east)	0.31	2.64	0.4	A	507	760
2 - Site Access	0.18	1.93	0.2	A	348	522
3 - Elettra Av (west)	0.04	2.35	0.0	A	57	85
4 - Waterberry Drive	0.09	2.54	0.1	A	117	175

Main Results for each time segment

12:30 - 12:45

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	416	104	13	1986	0.209	415	408	0.0	0.3	2.306	A
2 - Site Access	285	71	106	2321	0.123	285	321	0.0	0.1	1.767	A
3 - Elettra Av (west)	47	12	373	1735	0.027	47	18	0.0	0.0	2.148	A
4 - Waterberry Drive	96	24	325	1675	0.057	95	94	0.0	0.1	2.299	A

12:45 - 13:00

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	496	124	15	1984	0.250	496	488	0.3	0.3	2.435	A
2 - Site Access	341	85	127	2305	0.148	341	385	0.1	0.2	1.832	A
3 - Elettra Av (west)	56	14	446	1684	0.033	56	22	0.0	0.0	2.228	A
4 - Waterberry Drive	114	29	389	1631	0.070	114	112	0.1	0.1	2.395	A

13:00 - 13:15

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	608	152	19	1981	0.307	607	598	0.3	0.4	2.637	A
2 - Site Access	417	104	155	2282	0.183	417	471	0.2	0.2	1.929	A
3 - Elettra Av (west)	68	17	546	1613	0.042	68	26	0.0	0.0	2.348	A
4 - Waterberry Drive	140	35	477	1570	0.089	140	138	0.1	0.1	2.540	A

13:15 - 13:30

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	608	152	19	1981	0.307	608	598	0.4	0.4	2.637	A
2 - Site Access	417	104	155	2282	0.183	417	471	0.2	0.2	1.929	A
3 - Elettra Av (west)	68	17	546	1612	0.042	68	26	0.0	0.0	2.349	A
4 - Waterberry Drive	140	35	477	1569	0.089	140	138	0.1	0.1	2.541	A

13:30 - 13:45

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	496	124	15	1984	0.250	497	488	0.4	0.3	2.437	A
2 - Site Access	341	85	127	2304	0.148	341	385	0.2	0.2	1.832	A
3 - Elettra Av (west)	56	14	446	1683	0.033	56	22	0.0	0.0	2.229	A
4 - Waterberry Drive	114	29	389	1630	0.070	114	112	0.1	0.1	2.397	A

13:45 - 14:00

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Elettra Av (east)	416	104	13	1985	0.209	416	409	0.3	0.3	2.308	A
2 - Site Access	285	71	106	2320	0.123	285	322	0.2	0.1	1.771	A
3 - Elettra Av (west)	47	12	374	1735	0.027	47	18	0.0	0.0	2.150	A
4 - Waterberry Drive	96	24	326	1675	0.057	96	94	0.1	0.1	2.300	A

Junctions 9							
ARCADY 9 - Roundabout Module							
Version: 9.0.2.5947							
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Filename: Hambledon Road_Milton Road_Elettra Av_AM Peak_RevA.j9

Path: P:\19000's\19235\Technical\Junction Modelling 2018

Report generation date: 22/10/2018 10:51:20

»(Default Analysis Set) - 2023 Base, AM

»(Default Analysis Set) - 2023 Base + Dev, AM

Summary of junction performance

	AM			
	Q (PCU)	Delay (s)	RFC	LOS
A1 - 2023 Base				
1 - Milton road	2.7	14.84	0.73	B
2 - Hambledon Road (south)	0.8	2.20	0.44	A
3 - Elettra Avenue	0.4	3.59	0.26	A
4 - Hambledon Road (north)	1.4	5.33	0.59	A
A1 - 2023 Base + Dev				
1 - Milton road	4.1	21.77	0.81	C
2 - Hambledon Road (south)	0.9	2.37	0.47	A
3 - Elettra Avenue	0.5	3.90	0.32	A
4 - Hambledon Road (north)	1.6	5.86	0.61	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 Av. delay per arriving vehicle.

File summary

File Description

Title	Hambledon Road/ Milton Road/ Elettra Avenue
Location	Waterlooville
Site number	
Date	07/05/2015
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	17144
Enumerator	DTA\arcady
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2023 Base	AM	FLAT	08:00	09:00	60	15	✓
D3	2023 Base + Dev	AM	FLAT	08:00	09:00	60	15	✓

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	(Default Analysis Set)	✓	100.000	100.000

(Default Analysis Set) - 2023 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	2 - Hambledon Road (south) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	3 - Elettra Avenue - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	4 - Hambledon Road (north) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Standard Roundabout	1, 2, 3, 4	5.85	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Milton road	
2	Hambledon Road (south)	
3	Elettra Avenue	
4	Hambledon Road (north)	

Roundabout Geometry

Arm	V (m)	E (m)	I' (m)	R (m)	D (m)	PHI (deg)	Exit only
1 - Milton road	3.40	4.20	24.9	21.0	54.0	22.5	
2 - Hambledon Road (south)	7.20	8.20	55.8	54.6	54.0	25.0	
3 - Elettra Avenue	3.30	7.70	127.6	6.0	54.0	22.0	
4 - Hambledon Road (north)	3.60	7.70	127.6	6.0	54.0	22.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Milton road	0.521	1285
2 - Hambledon Road (south)	0.766	2587
3 - Elettra Avenue	0.622	2011
4 - Hambledon Road (north)	0.625	2026

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

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
1 - Milton road	Percentage		135.00
2 - Hambledon Road (south)	Percentage		125.00

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	2023 Base	AM	FLAT	08:00	09:00	60	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	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Milton road		FLAT	✓	669	100.000
2 - Hambledon Road (south)		FLAT	✓	1295	100.000
3 - Elettra Avenue		FLAT	✓	359	100.000
4 - Hambledon Road (north)		FLAT	✓	957	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		1 - Milton road	2 - Hambledon Road (south)	3 - Elettra Avenue	4 - Hambledon Road (north)
From	1 - Milton road	0	485	114	70
	2 - Hambledon Road (south)	317	17	350	611
	3 - Elettra Avenue	72	224	0	63
	4 - Hambledon Road (north)	27	793	110	27

Vehicle Mix

HV %s

	To				
		1 - Milton road	2 - Hambledon Road (south)	3 - Elettra Avenue	4 - Hambledon Road (north)
From	1 - Milton road	0	0	0	0
	2 - Hambledon Road (south)	0	0	0	0
	3 - Elettra Avenue	0	0	0	0
	4 - Hambledon Road (north)	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Milton road	0.73	14.84	2.7	B	669	669
2 - Hambledon Road (south)	0.44	2.20	0.8	A	1295	1295
3 - Elettra Avenue	0.26	3.59	0.4	A	359	359
4 - Hambledon Road (north)	0.59	5.33	1.4	A	957	957

Main Results for each time segment

08:00 - 08:15

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	669	167	1165	916	0.731	659	415	0.0	2.6	13.527	B
2 - Hambledon Road (south)	1295	324	317	2931	0.442	1292	1506	0.0	0.8	2.193	A
3 - Elettra Avenue	359	90	1038	1364	0.263	358	571	0.0	0.4	3.572	A
4 - Hambledon Road (north)	957	239	628	1633	0.586	951	768	0.0	1.4	5.238	A

08:15 - 08:30

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	669	167	1171	911	0.734	669	416	2.6	2.7	14.780	B
2 - Hambledon Road (south)	1295	324	321	2927	0.442	1295	1519	0.8	0.8	2.205	A
3 - Elettra Avenue	359	90	1042	1362	0.264	359	574	0.4	0.4	3.588	A
4 - Hambledon Road (north)	957	239	630	1632	0.586	957	771	1.4	1.4	5.333	A

08:30 - 08:45

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	669	167	1171	911	0.734	669	416	2.7	2.7	14.827	B
2 - Hambledon Road (south)	1295	324	321	2927	0.442	1295	1519	0.8	0.8	2.205	A
3 - Elettra Avenue	359	90	1042	1362	0.264	359	574	0.4	0.4	3.588	A
4 - Hambledon Road (north)	957	239	630	1632	0.586	957	771	1.4	1.4	5.333	A

08:45 - 09:00

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	669	167	1171	911	0.734	669	416	2.7	2.7	14.839	B
2 - Hambledon Road (south)	1295	324	321	2927	0.442	1295	1519	0.8	0.8	2.205	A
3 - Elettra Avenue	359	90	1042	1362	0.264	359	574	0.4	0.4	3.588	A
4 - Hambledon Road (north)	957	239	630	1632	0.586	957	771	1.4	1.4	5.333	A

(Default Analysis Set) - 2023 Base + Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	2 - Hambledon Road (south) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	3 - Elettra Avenue - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	4 - Hambledon Road (north) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Standard Roundabout	1, 2, 3, 4	7.47	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2023 Base + Dev	AM	FLAT	08:00	09:00	60	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	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Milton road		FLAT	✓	704	100.000
2 - Hambledon Road (south)		FLAT	✓	1355	100.000
3 - Elettra Avenue		FLAT	✓	438	100.000
4 - Hambledon Road (north)		FLAT	✓	976	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		1 - Milton road	2 - Hambledon Road (south)	3 - Elettra Avenue	4 - Hambledon Road (north)
From	1 - Milton road	0	485	149	70
	2 - Hambledon Road (south)	317	17	410	611
	3 - Elettra Avenue	96	266	0	76
	4 - Hambledon Road (north)	27	793	129	27

Vehicle Mix

HV %s

	To				
From		1 - Milton road	2 - Hambledon Road (south)	3 - Elettra Avenue	4 - Hambledon Road (north)
	1 - Milton road	0	0	0	0
	2 - Hambledon Road (south)	0	0	0	0
	3 - Elettra Avenue	0	0	0	0
	4 - Hambledon Road (north)	0	0	0	0

Results

Results Summary for whole modelled period

Am	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Milton road	0.81	21.77	4.1	C	704	704
2 - Hambledon Road (south)	0.47	2.37	0.9	A	1355	1355
3 - Elettra Avenue	0.32	3.90	0.5	A	438	438
4 - Hambledon Road (north)	0.61	5.86	1.6	A	976	976

Main Results for each time segment

08:00 - 08:15

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	704	176	1225	873	0.806	689	439	0.0	3.7	18.293	C
2 - Hambledon Road (south)	1355	339	369	2881	0.470	1351	1544	0.0	0.9	2.349	A
3 - Elettra Avenue	438	110	1038	1365	0.321	436	683	0.0	0.5	3.869	A
4 - Hambledon Road (north)	976	244	694	1592	0.613	970	780	0.0	1.6	5.730	A

08:15 - 08:30

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	704	176	1232	868	0.811	703	440	3.7	4.0	21.460	C
2 - Hambledon Road (south)	1355	339	375	2876	0.471	1355	1560	0.9	0.9	2.366	A
3 - Elettra Avenue	438	110	1042	1362	0.322	438	688	0.5	0.5	3.895	A
4 - Hambledon Road (north)	976	244	696	1591	0.614	976	784	1.6	1.6	5.856	A

08:30 - 08:45

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	704	176	1232	868	0.811	704	440	4.0	4.1	21.695	C
2 - Hambledon Road (south)	1355	339	375	2876	0.471	1355	1561	0.9	0.9	2.367	A
3 - Elettra Avenue	438	110	1042	1362	0.322	438	688	0.5	0.5	3.895	A
4 - Hambledon Road (north)	976	244	696	1591	0.614	976	784	1.6	1.6	5.856	A

08:45 - 09:00

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	704	176	1232	868	0.811	704	440	4.1	4.1	21.767	C
2 - Hambledon Road (south)	1355	339	375	2875	0.471	1355	1561	0.9	0.9	2.367	A
3 - Elettra Avenue	438	110	1042	1362	0.322	438	688	0.5	0.5	3.895	A
4 - Hambledon Road (north)	976	244	696	1591	0.614	976	784	1.6	1.6	5.856	A

Junctions 9			
ARCADY 9 - Roundabout Module			
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Filename: Hambledon Road_Milton Road_Elettra Av_PM Peak_RevA.j9

Path: P:\19000's\19235\Technical\Junction Modelling 2018

Report generation date: 22/10/2018 10:55:12

- »(Default Analysis Set) - 2023 Base, PM
- »(Default Analysis Set) - 2023 Base, Sat
- »(Default Analysis Set) - 2023 Base + Dev, PM
- »(Default Analysis Set) - 2023 Base + Dev, Sat

Summary of junction performance

	PM				Sat			
	Q (PCU)	Delay (s)	RFC	LOS	Q (PCU)	Delay (s)	RFC	LOS
A1 - 2023 Base								
1 - Milton road	1.1	7.86	0.53	A	1.6	8.84	0.61	A
2 - Hambledon Road (south)	2.4	5.14	0.71	A	1.5	3.79	0.60	A
3 - Elettra Avenue	2.6	16.06	0.73	C	0.8	6.75	0.43	A
4 - Hambledon Road (north)	4.2	22.22	0.81	C	2.5	12.08	0.71	B
A1 - 2023 Base + Dev								
1 - Milton road	1.5	10.10	0.61	B	2.8	14.68	0.74	B
2 - Hambledon Road (south)	2.9	6.03	0.75	A	2.0	4.85	0.67	A
3 - Elettra Avenue	9.3	47.28	0.91	E	1.7	10.58	0.64	B
4 - Hambledon Road (north)	7.5	39.38	0.89	E	4.0	18.80	0.80	C

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 Av. delay per arriving vehicle.

File summary

File Description

Title	Hambledon Road/ Milton Road/ Elettra Avenue
Location	Waterlooville
Site number	
Date	07/05/2015
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	17144
Enumerator	DTA\arcady
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2023 Base	PM	FLAT	17:00	18:00	60	15	✓
D4	2023 Base	Sat	FLAT	11:30	12:30	60	15	✓
D6	2023 Base + Dev	PM	FLAT	17:00	18:00	60	15	✓
D8	2023 Base + Dev	Sat	FLAT	11:30	12:30	60	15	✓

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	(Default Analysis Set)	✓	100.000	100.000

(Default Analysis Set) - 2023 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	2 - Hambledon Road (south) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	3 - Elettra Avenue - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	4 - Hambledon Road (north) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Standard Roundabout	1, 2, 3, 4	10.79	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Milton road	
2	Hambledon Road (south)	
3	Elettra Avenue	
4	Hambledon Road (north)	

Roundabout Geometry

Arm	V (m)	E (m)	I' (m)	R (m)	D (m)	PHI (deg)	Exit only
1 - Milton road	3.40	4.20	24.9	21.0	54.0	22.5	
2 - Hambledon Road (south)	7.20	8.20	55.8	54.6	54.0	25.0	
3 - Elettra Avenue	3.30	7.70	127.6	6.0	54.0	22.0	
4 - Hambledon Road (north)	3.60	7.70	127.6	6.0	54.0	22.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
1 - Milton road	None		
2 - Hambledon Road (south)	Direct		-416
3 - Elettra Avenue	None		
4 - Hambledon Road (north)	None		

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Milton road	0.521	1285
2 - Hambledon Road (south)	0.766	2171
3 - Elettra Avenue	0.622	2011
4 - Hambledon Road (north)	0.625	2026

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

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
1 - Milton road	Percentage		135.00
2 - Hambledon Road (south)	Percentage		120.00
3 - Elettra Avenue	Percentage		80.00
4 - Hambledon Road (north)	Percentage		70.00

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	2023 Base	PM	FLAT	17:00	18:00	60	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	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Milton road		FLAT	✓	512	100.000
2 - Hambledon Road (south)		FLAT	✓	1717	100.000
3 - Elettra Avenue		FLAT	✓	595	100.000
4 - Hambledon Road (north)		FLAT	✓	705	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		1 - Milton road	2 - Hambledon Road (south)	3 - Elettra Avenue	4 - Hambledon Road (north)
From	1 - Milton road	0	366	91	55
	2 - Hambledon Road (south)	666	130	200	721
	3 - Elettra Avenue	173	293	0	129
	4 - Hambledon Road (north)	40	606	45	14

Vehicle Mix

HV %s

	To				
		1 - Milton road	2 - Hambledon Road (south)	3 - Elettra Avenue	4 - Hambledon Road (north)
From	1 - Milton road	0	0	0	0
	2 - Hambledon Road (south)	0	0	0	0
	3 - Elettra Avenue	0	0	0	0
	4 - Hambledon Road (north)	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Milton road	0.53	7.86	1.1	A	512	512
2 - Hambledon Road (south)	0.71	5.14	2.4	A	1717	1717
3 - Elettra Avenue	0.73	16.06	2.6	C	595	595
4 - Hambledon Road (north)	0.81	22.22	4.2	C	705	705

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	512	128	1068	984	0.521	508	872	0.0	1.1	7.501	A
2 - Hambledon Road (south)	1717	429	203	2420	0.710	1707	1373	0.0	2.4	4.990	A
3 - Elettra Avenue	595	149	1577	823	0.723	585	333	0.0	2.5	14.577	B
4 - Hambledon Road (north)	705	176	1250	871	0.809	690	912	0.0	3.8	18.560	C

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	512	128	1087	970	0.528	512	879	1.1	1.1	7.845	A
2 - Hambledon Road (south)	1717	429	205	2418	0.710	1717	1394	2.4	2.4	5.136	A
3 - Elettra Avenue	595	149	1586	819	0.727	595	336	2.5	2.6	15.988	C
4 - Hambledon Road (north)	705	176	1262	866	0.814	704	919	3.8	4.1	21.878	C

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	512	128	1088	970	0.528	512	879	1.1	1.1	7.860	A
2 - Hambledon Road (south)	1717	429	205	2417	0.710	1717	1395	2.4	2.4	5.139	A
3 - Elettra Avenue	595	149	1586	819	0.727	595	336	2.6	2.6	16.045	C
4 - Hambledon Road (north)	705	176	1262	866	0.814	705	919	4.1	4.2	22.137	C

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	512	128	1088	970	0.528	512	879	1.1	1.1	7.864	A
2 - Hambledon Road (south)	1717	429	205	2417	0.710	1717	1395	2.4	2.4	5.139	A
3 - Elettra Avenue	595	149	1586	819	0.727	595	336	2.6	2.6	16.063	C
4 - Hambledon Road (north)	705	176	1262	866	0.814	705	919	4.2	4.2	22.224	C

(Default Analysis Set) - 2023 Base, Sat

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	2 - Hambledon Road (south) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	3 - Elettra Avenue - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	4 - Hambledon Road (north) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Standard Roundabout	1, 2, 3, 4	7.09	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2023 Base	Sat	FLAT	11:30	12:30	60	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	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Milton road		FLAT	✓	639	100.000
2 - Hambledon Road (south)		FLAT	✓	1414	100.000
3 - Elettra Avenue		FLAT	✓	403	100.000
4 - Hambledon Road (north)		FLAT	✓	739	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		1 - Milton road	2 - Hambledon Road (south)	3 - Elettra Avenue	4 - Hambledon Road (north)
From	1 - Milton road	4	446	81	108
	2 - Hambledon Road (south)	493	37	191	693
	3 - Elettra Avenue	103	234	0	66
	4 - Hambledon Road (north)	31	637	56	15

Vehicle Mix

HV %s

	To				
From		1 - Milton road	2 - Hambledon Road (south)	3 - Elettra Avenue	4 - Hambledon Road (north)
	1 - Milton road	0	0	0	0
	2 - Hambledon Road (south)	0	0	0	0
	3 - Elettra Avenue	0	0	0	0
	4 - Hambledon Road (north)	0	0	0	0

Results

Results Summary for whole modelled period

Am	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Milton road	0.61	8.84	1.6	A	639	639
2 - Hambledon Road (south)	0.60	3.79	1.5	A	1414	1414
3 - Elettra Avenue	0.43	6.75	0.8	A	403	403
4 - Hambledon Road (north)	0.71	12.08	2.5	B	739	739

Main Results for each time segment

11:30 - 11:45

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	639	160	968	1054	0.606	633	628	0.0	1.5	8.436	A
2 - Hambledon Road (south)	1414	354	261	2366	0.598	1408	1340	0.0	1.5	3.737	A
3 - Elettra Avenue	403	101	1344	939	0.429	400	326	0.0	0.7	6.640	A
4 - Hambledon Road (north)	739	185	866	1039	0.711	730	877	0.0	2.4	11.320	B

11:45 - 12:00

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	639	160	979	1046	0.611	639	631	1.5	1.5	8.824	A
2 - Hambledon Road (south)	1414	354	264	2363	0.598	1414	1354	1.5	1.5	3.791	A
3 - Elettra Avenue	403	101	1350	936	0.430	403	328	0.7	0.7	6.750	A
4 - Hambledon Road (north)	739	185	871	1037	0.713	739	882	2.4	2.4	12.049	B

12:00 - 12:15

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	639	160	979	1046	0.611	639	631	1.5	1.6	8.834	A
2 - Hambledon Road (south)	1414	354	264	2363	0.598	1414	1354	1.5	1.5	3.791	A
3 - Elettra Avenue	403	101	1350	936	0.430	403	328	0.7	0.8	6.750	A
4 - Hambledon Road (north)	739	185	871	1037	0.713	739	882	2.4	2.4	12.068	B

12:15 - 12:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	639	160	979	1046	0.611	639	631	1.6	1.6	8.836	A
2 - Hambledon Road (south)	1414	354	264	2363	0.598	1414	1354	1.5	1.5	3.791	A
3 - Elettra Avenue	403	101	1350	936	0.430	403	328	0.8	0.8	6.750	A
4 - Hambledon Road (north)	739	185	871	1037	0.713	739	882	2.4	2.5	12.076	B

(Default Analysis Set) - 2023 Base + Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	2 - Hambledon Road (south) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	3 - Elettra Avenue - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	4 - Hambledon Road (north) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Standard Roundabout	1, 2, 3, 4	21.14	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2023 Base + Dev	PM	FLAT	17:00	18:00	60	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	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Milton road		FLAT	✓	547	100.000
2 - Hambledon Road (south)		FLAT	✓	1771	100.000
3 - Elettra Avenue		FLAT	✓	749	100.000
4 - Hambledon Road (north)		FLAT	✓	724	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		1 - Milton road	2 - Hambledon Road (south)	3 - Elettra Avenue	4 - Hambledon Road (north)
From	1 - Milton road	0	366	126	55
	2 - Hambledon Road (south)	666	130	254	721
	3 - Elettra Avenue	223	370	0	156
	4 - Hambledon Road (north)	40	606	64	14

Vehicle Mix

HV %s

	To				
From		1 - Milton road	2 - Hambledon Road (south)	3 - Elettra Avenue	4 - Hambledon Road (north)
	1 - Milton road	0	0	0	0
	2 - Hambledon Road (south)	0	0	0	0
	3 - Elettra Avenue	0	0	0	0
	4 - Hambledon Road (north)	0	0	0	0

Results

Results Summary for whole modelled period

Am	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Milton road	0.61	10.10	1.5	B	547	547
2 - Hambledon Road (south)	0.75	6.03	2.9	A	1771	1771
3 - Elettra Avenue	0.91	47.28	9.3	E	749	749
4 - Hambledon Road (north)	0.89	39.38	7.5	E	724	724

Main Results for each time segment

17:00 - 17:15

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	547	137	1147	928	0.590	541	915	0.0	1.4	9.191	A
2 - Hambledon Road (south)	1771	443	255	2372	0.747	1760	1434	0.0	2.9	5.776	A
3 - Elettra Avenue	749	187	1575	824	0.909	721	439	0.0	7.0	29.654	D
4 - Hambledon Road (north)	724	181	1362	822	0.881	701	934	0.0	5.8	26.123	D

17:15 - 17:30

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	547	137	1177	907	0.603	547	927	1.4	1.5	9.986	A
2 - Hambledon Road (south)	1771	443	258	2368	0.748	1771	1466	2.9	2.9	6.021	A
3 - Elettra Avenue	749	187	1586	819	0.915	744	444	7.0	8.3	42.899	E
4 - Hambledon Road (north)	724	181	1385	812	0.892	720	945	5.8	6.8	36.278	E

17:30 - 17:45

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	547	137	1181	904	0.605	547	928	1.5	1.5	10.074	B
2 - Hambledon Road (south)	1771	443	259	2368	0.748	1771	1469	2.9	2.9	6.027	A
3 - Elettra Avenue	749	187	1586	819	0.915	747	444	8.3	8.9	45.854	E
4 - Hambledon Road (north)	724	181	1387	811	0.893	722	945	6.8	7.3	38.429	E

17:45 - 18:00

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	547	137	1182	903	0.606	547	929	1.5	1.5	10.103	B
2 - Hambledon Road (south)	1771	443	259	2368	0.748	1771	1470	2.9	2.9	6.030	A
3 - Elettra Avenue	749	187	1586	819	0.915	748	444	8.9	9.3	47.283	E
4 - Hambledon Road (north)	724	181	1388	811	0.893	723	946	7.3	7.5	39.384	E

(Default Analysis Set) - 2023 Base + Dev, Sat

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	2 - Hambledon Road (south) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	3 - Elettra Avenue - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	4 - Hambledon Road (north) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Standard Roundabout	1, 2, 3, 4	10.73	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D8	2023 Base + Dev	Sat	FLAT	11:30	12:30	60	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	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Milton road		FLAT	✓	706	100.000
2 - Hambledon Road (south)		FLAT	✓	1523	100.000
3 - Elettra Avenue		FLAT	✓	598	100.000
4 - Hambledon Road (north)		FLAT	✓	778	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		1 - Milton road	2 - Hambledon Road (south)	3 - Elettra Avenue	4 - Hambledon Road (north)
From	1 - Milton road	0	446	152	108
	2 - Hambledon Road (south)	493	37	300	693
	3 - Elettra Avenue	166	331	0	101
	4 - Hambledon Road (north)	31	637	95	15

Vehicle Mix

HV %s

	To				
From		1 - Milton road	2 - Hambledon Road (south)	3 - Elettra Avenue	4 - Hambledon Road (north)
	1 - Milton road	0	0	0	0
	2 - Hambledon Road (south)	0	0	0	0
	3 - Elettra Avenue	0	0	0	0
	4 - Hambledon Road (north)	0	0	0	0

Results

Results Summary for whole modelled period

Am	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Milton road	0.74	14.68	2.8	B	706	706
2 - Hambledon Road (south)	0.67	4.85	2.0	A	1523	1523
3 - Elettra Avenue	0.64	10.58	1.7	B	598	598
4 - Hambledon Road (north)	0.80	18.80	4.0	C	778	778

Main Results for each time segment

11:30 - 11:45

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	706	177	1097	963	0.733	696	685	0.0	2.6	12.995	B
2 - Hambledon Road (south)	1523	381	364	2271	0.671	1515	1429	0.0	2.0	4.713	A
3 - Elettra Avenue	598	150	1338	942	0.635	591	541	0.0	1.7	10.072	B
4 - Hambledon Road (north)	778	195	1019	972	0.800	763	910	0.0	3.7	16.261	C

11:45 - 12:00

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	706	177	1114	951	0.742	705	690	2.6	2.8	14.563	B
2 - Hambledon Road (south)	1523	381	370	2266	0.672	1523	1450	2.0	2.0	4.841	A
3 - Elettra Avenue	598	150	1346	938	0.637	598	547	1.7	1.7	10.561	B
4 - Hambledon Road (north)	778	195	1027	969	0.803	777	917	3.7	3.9	18.607	C

12:00 - 12:15

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	706	177	1115	951	0.743	706	690	2.8	2.8	14.657	B
2 - Hambledon Road (south)	1523	381	370	2266	0.672	1523	1451	2.0	2.0	4.845	A
3 - Elettra Avenue	598	150	1346	938	0.637	598	547	1.7	1.7	10.574	B
4 - Hambledon Road (north)	778	195	1027	969	0.803	778	917	3.9	3.9	18.744	C

12:15 - 12:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	706	177	1115	951	0.743	706	690	2.8	2.8	14.684	B
2 - Hambledon Road (south)	1523	381	370	2266	0.672	1523	1451	2.0	2.0	4.845	A
3 - Elettra Avenue	598	150	1346	938	0.637	598	547	1.7	1.7	10.576	B
4 - Hambledon Road (north)	778	195	1027	969	0.803	778	917	3.9	4.0	18.796	C

Junctions 9							
ARCADY 9 - Roundabout Module							
Version: 9.0.2.5947							
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Filename: Hambledon Road_Milton Road_Elettra Av_PM Peak_Mitigation_RevA.j9

Path: P:\19000's\19235\Technical\Junction Modelling 2018

Report generation date: 22/10/2018 10:58:21

»(Default Analysis Set) - 2023 Base + Dev, PM

»(Default Analysis Set) - 2023 Base + Dev, Sat

Summary of junction performance

	PM				Sat			
	Q (PCU)	Delay (s)	RFC	LOS	Q (PCU)	Delay (s)	RFC	LOS
A1 - 2023 Base + Dev								
1 - Milton road	1.5	10.12	0.61	B	2.8	14.68	0.74	B
2 - Hambledon Road (south)	2.9	6.03	0.75	A	2.0	4.85	0.67	A
3 - Elettra Avenue	4.5	22.14	0.82	C	1.4	8.23	0.58	A
4 - Hambledon Road (north)	7.6	39.66	0.89	E	4.0	18.80	0.80	C

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 Av. delay per arriving vehicle.

File summary

File Description

Title	Hambledon Road/ Milton Road/ Elettra Avenue
Location	Waterlooville
Site number	
Date	07/05/2015
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	17144
Enumerator	DTA\arcady
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2023 Base + Dev	PM	FLAT	17:00	18:00	60	15	✓
D8	2023 Base + Dev	Sat	FLAT	11:30	12:30	60	15	✓

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	(Default Analysis Set)	✓	100.000	100.000

(Default Analysis Set) - 2023 Base + Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	2 - Hambledon Road (south) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	3 - Elettra Avenue - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	4 - Hambledon Road (north) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Standard Roundabout	1, 2, 3, 4	16.23	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Milton road	
2	Hambledon Road (south)	
3	Elettra Avenue	
4	Hambledon Road (north)	

Roundabout Geometry

Arm	V (m)	E (m)	I' (m)	R (m)	D (m)	PHI (deg)	Exit only
1 - Milton road	3.40	4.20	24.9	21.0	54.0	22.5	
2 - Hambledon Road (south)	7.20	8.20	55.8	54.6	54.0	25.0	
3 - Elettra Avenue	3.30	9.30	60.0	6.0	54.0	22.0	
4 - Hambledon Road (north)	3.60	7.70	127.6	6.0	54.0	22.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
1 - Milton road	None		
2 - Hambledon Road (south)	Direct		-416
3 - Elettra Avenue	None		
4 - Hambledon Road (north)	None		

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Milton road	0.521	1285
2 - Hambledon Road (south)	0.766	2171
3 - Elettra Avenue	0.652	2172
4 - Hambledon Road (north)	0.625	2026

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

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
1 - Milton road	Percentage		135.00
2 - Hambledon Road (south)	Percentage		120.00
3 - Elettra Avenue	Percentage		80.00
4 - Hambledon Road (north)	Percentage		70.00

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	2023 Base + Dev	PM	FLAT	17:00	18:00	60	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	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Milton road		FLAT	✓	547	100.000
2 - Hambledon Road (south)		FLAT	✓	1771	100.000
3 - Elettra Avenue		FLAT	✓	749	100.000
4 - Hambledon Road (north)		FLAT	✓	724	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		1 - Milton road	2 - Hambledon Road (south)	3 - Elettra Avenue	4 - Hambledon Road (north)
From	1 - Milton road	0	366	126	55
	2 - Hambledon Road (south)	666	130	254	721
	3 - Elettra Avenue	223	370	0	156
	4 - Hambledon Road (north)	40	606	64	14

Vehicle Mix

HV %s

	To				
		1 - Milton road	2 - Hambledon Road (south)	3 - Elettra Avenue	4 - Hambledon Road (north)
From	1 - Milton road	0	0	0	0
	2 - Hambledon Road (south)	0	0	0	0
	3 - Elettra Avenue	0	0	0	0
	4 - Hambledon Road (north)	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Milton road	0.61	10.12	1.5	B	547	547
2 - Hambledon Road (south)	0.75	6.03	2.9	A	1771	1771
3 - Elettra Avenue	0.82	22.14	4.5	C	749	749
4 - Hambledon Road (north)	0.89	39.66	7.6	E	724	724

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	547	137	1153	924	0.592	541	919	0.0	1.4	9.278	A
2 - Hambledon Road (south)	1771	443	255	2372	0.747	1760	1440	0.0	2.9	5.775	A
3 - Elettra Avenue	749	187	1575	916	0.818	733	439	0.0	4.0	18.346	C
4 - Hambledon Road (north)	724	181	1371	818	0.885	700	937	0.0	5.9	26.751	D

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	547	137	1180	905	0.604	547	928	1.4	1.5	10.029	B
2 - Hambledon Road (south)	1771	443	258	2368	0.748	1771	1468	2.9	2.9	6.021	A
3 - Elettra Avenue	749	187	1586	910	0.823	748	444	4.0	4.3	21.772	C
4 - Hambledon Road (north)	724	181	1388	811	0.893	720	946	5.9	6.9	36.913	E

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	547	137	1182	903	0.606	547	929	1.5	1.5	10.096	B
2 - Hambledon Road (south)	1771	443	259	2368	0.748	1771	1470	2.9	2.9	6.027	A
3 - Elettra Avenue	749	187	1586	910	0.823	749	444	4.3	4.4	22.049	C
4 - Hambledon Road (north)	724	181	1389	810	0.894	722	946	6.9	7.4	38.832	E

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	547	137	1183	903	0.606	547	929	1.5	1.5	10.116	B
2 - Hambledon Road (south)	1771	443	259	2368	0.748	1771	1471	2.9	2.9	6.030	A
3 - Elettra Avenue	749	187	1586	910	0.823	749	444	4.4	4.5	22.142	C
4 - Hambledon Road (north)	724	181	1389	810	0.894	723	946	7.4	7.6	39.661	E

(Default Analysis Set) - 2023 Base + Dev, Sat

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	2 - Hambledon Road (south) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	3 - Elettra Avenue - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	4 - Hambledon Road (north) - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	(untitled)	Standard Roundabout	1, 2, 3, 4	10.34	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D8	2023 Base + Dev	Sat	FLAT	11:30	12:30	60	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	Av. Demand (PCU/hr)	Scaling Factor (%)
1 - Milton road		FLAT	✓	706	100.000
2 - Hambledon Road (south)		FLAT	✓	1523	100.000
3 - Elettra Avenue		FLAT	✓	598	100.000
4 - Hambledon Road (north)		FLAT	✓	778	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		1 - Milton road	2 - Hambledon Road (south)	3 - Elettra Avenue	4 - Hambledon Road (north)
From	1 - Milton road	0	446	152	108
	2 - Hambledon Road (south)	493	37	300	693
	3 - Elettra Avenue	166	331	0	101
	4 - Hambledon Road (north)	31	637	95	15

Vehicle Mix

HV %s

	To				
From		1 - Milton road	2 - Hambledon Road (south)	3 - Elettra Avenue	4 - Hambledon Road (north)
	1 - Milton road	0	0	0	0
	2 - Hambledon Road (south)	0	0	0	0
	3 - Elettra Avenue	0	0	0	0
	4 - Hambledon Road (north)	0	0	0	0

Results

Results Summary for whole modelled period

Am	Max RFC	Max delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Milton road	0.74	14.68	2.8	B	706	706
2 - Hambledon Road (south)	0.67	4.85	2.0	A	1523	1523
3 - Elettra Avenue	0.58	8.23	1.4	A	598	598
4 - Hambledon Road (north)	0.80	18.80	4.0	C	778	778

Main Results for each time segment

11:30 - 11:45

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	706	177	1098	963	0.733	696	685	0.0	2.6	13.019	B
2 - Hambledon Road (south)	1523	381	364	2271	0.671	1515	1429	0.0	2.0	4.713	A
3 - Elettra Avenue	598	150	1338	1040	0.575	593	541	0.0	1.3	7.963	A
4 - Hambledon Road (north)	778	195	1020	972	0.801	763	911	0.0	3.7	16.295	C

11:45 - 12:00

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	706	177	1114	951	0.742	705	690	2.6	2.8	14.569	B
2 - Hambledon Road (south)	1523	381	370	2266	0.672	1523	1450	2.0	2.0	4.841	A
3 - Elettra Avenue	598	150	1346	1036	0.577	598	547	1.3	1.3	8.223	A
4 - Hambledon Road (north)	778	195	1027	969	0.803	777	917	3.7	3.9	18.615	C

12:00 - 12:15

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	706	177	1115	951	0.743	706	690	2.8	2.8	14.661	B
2 - Hambledon Road (south)	1523	381	370	2266	0.672	1523	1451	2.0	2.0	4.845	A
3 - Elettra Avenue	598	150	1346	1035	0.578	598	547	1.3	1.4	8.227	A
4 - Hambledon Road (north)	778	195	1027	969	0.803	778	917	3.9	3.9	18.749	C

12:15 - 12:30

Am	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1 - Milton road	706	177	1115	951	0.743	706	690	2.8	2.8	14.684	B
2 - Hambledon Road (south)	1523	381	370	2266	0.672	1523	1451	2.0	2.0	4.845	A
3 - Elettra Avenue	598	150	1346	1035	0.578	598	547	1.4	1.4	8.229	A
4 - Hambledon Road (north)	778	195	1027	969	0.803	778	917	3.9	4.0	18.796	C