

Technical Note – Southern Access Roundabout

Introduction

- 1.1 This Technical Note has been produced on behalf of Grainger Plc in relation to the outline planning application for the development area known as “Blue Star Land”, located adjacent the eastern edge of the Berewood Development, Waterlooville.
- 1.2 This Technical Note provides details in relation to Hampshire County Council's (HCC) concerns regarding the existing Ladybridge Roundabout and the Southern Access junction proposed as part of the wider Berewood development.

Southern Access Roundabout

- 1.3 HCC have concerns regarding the impact of the Blue Star Land development on the operation of the existing Ladybridge Roundabout junction.
- 1.4 HCC's latest comments, dated Nov 2025, state that:

“As set out previously 10% of development trips are proposed to travel towards the Ladybridge Roundabout. The applicant has undertaken a percentage impact assessment and suggests that the requirement to restrict occupations until the Berewood Southern Access works have been implemented is not reasonable given the less than 1% increase in movements during the peak hours. The Highway Authority do not agree with this narrative.

Whilst it is appreciated this is a limited impact, given the sensitivities of this junction any additional trips above that assessed as part of the s106 DoV for the Berewood MDA can have severe implications on the operation of the existing layout. The junction was found to be sensitive and any additional trips above that assessed would impede the ability for the junction to operate in a safe and suitable manner.

The Highway Authority remain of the view that should any future planning consent be granted the Southern Access will need to be in place prior to the occupation of any additional development, which should be covered by an appropriately worded planning condition. Given the status of the southern access and associated revised triggers associated with the wider MDA site regarding occupations, it would be inappropriate to enable further occupations above that agreed within the s106 DoV given the reliance on the Southern Access for this development distribution. This would be a consistent approach applied with

any major development in the area with a reliance on the Southern Access junction for distribution purposes”

1.5 Mayer Brown have previously demonstrated that the BSL development results in an impact of less than 1% on the approaches to the roundabout. The predicted traffic flows are detailed in **Diagram 1.1** at the back of this Note. The BSL development is predicted to result in an additional 10 vehicle movements through the roundabout during the AM peak and an additional nine vehicle movements during the PM peak. These levels of additional vehicles are minimal and are considered to be within the daily fluctuations of traffic levels through the roundabout.

1.6 **Figure 1.1** details the BSL movements through the existing Ladybridge Roundabout.

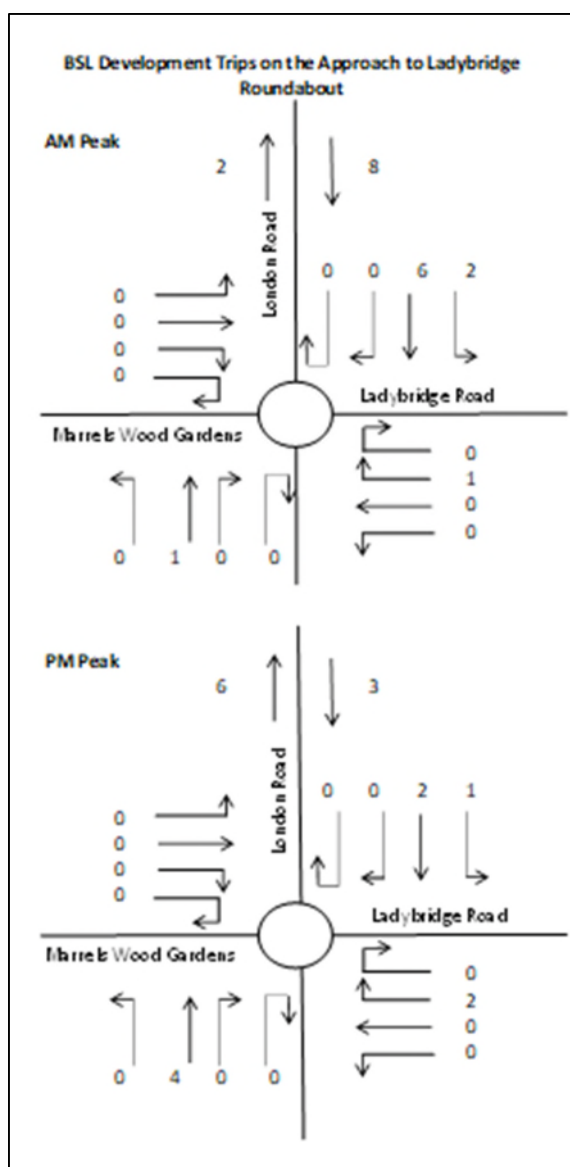


Figure 1.1: BSL Development Traffic Flows – Ladybridge Roundabout

(ref: Extract from Diagram 1.1)

1.7 **Diagram 1.2** at the back of this Technical Note provides details of the predicted percentage impact of the BSL development traffic flows on the existing Ladybridge Roundabout. Figure 1.2 details an extract for ease of reference.

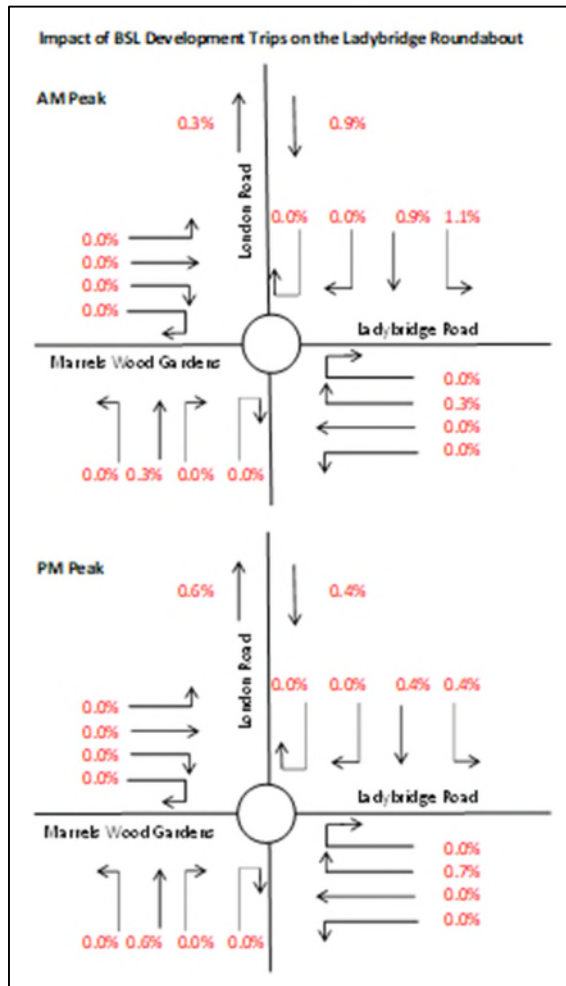


Figure 1.2: BSL Development Traffic Flows – % Impact on Ladybridge Roundabout
(ref: Extract from Diagram 1.2)

1.8 **Table 1.1** summarises the percentage impact of the predicted BSL traffic on the approaches to the existing Ladybridge Roundabout for both the AM and PM peak periods.

Approach	AM Peak		PM Peak	
	No. of Vehicles	Percentage Increase	No. of Vehicles	Percentage Increase
London Road (N)	8	0.93%	3	0.36%
Ladybridge Road	1	0.11%	2	0.33%
London Road (S)	1	0.16%	4	0.39%
Marrels Wood Gardens	0	0.00%	0	0.00%
Junction Total	10	0.43%	9	0.36%

Table 1.1: Impact on Ladybridge Roundabout

- 1.9 It can be seen from **Table 1.1** that the increase in traffic flows is below 1% for all approaches to the Ladybridge Roundabout and when looking at the junction as a whole the increase in traffic flows is below 0.5% with increases of 0.43% during the AM peak and 0.36% during the PM peak period.

Berewood S106 Trigger and Blue Star Land Development Phasing

- 1.10 Grainger have advised that the Southern Access junction improvements are due to commence construction works in May this year (May 2026) and that the construction works will have a duration of 12 months. With completion due in May 2027.
- 1.11 The BSL development is forecast to have its first occupations at the end of 2028 and will then take a total of 12 months to full build out. Therefore, the BSL development is likely to be fully occupied by end of 2029.
- 1.12 It can be seen, from the timescales detailed within this Technical Note, that the Southern Access improvements are scheduled to be completed 19 months before the BSL development is predicted to reach full occupation levels and, indeed, would be complete prior to first occupation of the BSL development.

Junction Capacity Assessments

- 1.13 In order to address HCC concerns over the impact of the BSL development on the operation of the existing Ladybridge Roundabout the 2029 forecast base year with 1,500 dwellings on the Berewood development has been used.
- 1.14 The following scenarios have been assessed:
- 2029 Base (with 1,500 dwellings on the Berewood development)
 - 2029 Base (with 1,500 dwellings on the Berewood development) and the BSL development
- 1.15 The existing Ladybridge Roundabout has been assessed using the ARCADY module of the Junctions 11 software suite.
- 1.16 A copy of the ARCADY output is provided in **Appendix A** for information.
- 1.17 **Table 1.2** details the results for the 2029 Base and 2029 Base with BSL for the AM peak and **Table 1.3** for the PM peak.

Arm	Existing Layout - AM Peak			
	2029 Forecast Base (with 1,500 Dwellings Berewood Development)		2029 Forecast Base (with 1,500 Dwellings Berewood Development) + Blue Star Land Dev	
	RFC	Q	RFC	Q
London Road (N)	0.98	18.0	0.99	19.9
Ladybridge Road	0.44	0.8	0.45	0.8
London Road (S)	0.81	4.1	0.81	4.1
Marrells Wood Gardens	0.09	0.1	0.10	0.1

Table 1.2: ARCADY Results: Ladybridge Roundabout Existing Layout - AM Peak

- 1.18 It can be seen from **Table 1.2** that the additional traffic through the Ladybridge Roundabout as a result of the BSL development is minimal and results in an increase in RFC on the London Road (N) arm of only 0.01 with an increase in the predicted queue of 1.9 vehicles.

Arm	Existing Layout - PM Peak			
	2029 Forecast Base (with 1,500 Dwellings Berewood Development)		2029 Forecast Base (with 1,500 Dwellings Berewood Development) + Blue Star Land Dev	
	RFC	Q	RFC	Q
London Road (N)	0.90	7.6	0.90	7.7
Ladybridge Road	0.40	0.7	0.40	0.7
London Road (S)	1.00	25.3	1.01	26.8
Marrells Wood Gardens	0.10	0.1	0.10	0.1

Table 1.3: ARCADY Results: Ladybridge Roundabout Existing Layout - PM Peak

- 1.19 It can be seen in **Table 1.3** that during the PM peak the RFC is increased by 0.01 on the London Road (S) approach and the queue on this arm increases slightly by 1.5 vehicles. Additionally, there is a minimal increase in the queue on London Road (N) of 0.1 vehicle.
- 1.20 We do not consider that the development traffic from BSL will have any impact on the capacity of the existing Ladybridge Roundabout and will therefore not affect the operation of the junction. HCC's comment that they do not agree with this narrative, referring specifically to the percentage impact on the roundabout, is unfounded, as the traffic flow calculations for the forecast BSL movements through Ladybridge Roundabout clearly support our position.

NPPF Severe Impact test

- 1.21 The NPPF "Severe Impact" test refers to there being an "*unacceptable impact on highway safety*" or the "*residual cumulative impacts on the road network would be severe*".
- 1.22 Minor increases in queuing, such as those identified at the existing Ladybridge Roundabout (approximately an additional two vehicles), or short-lived congestion during peak periods,

cannot reasonably be characterised as severe. Such changes fall well within the normal day-to-day variation in traffic conditions experienced on the local highway network and therefore, from a professional opinion, do not represent a material deterioration in operational performance. We are, therefore, of the view that the impact of the development traffic on the existing junction arrangement would not be severe.

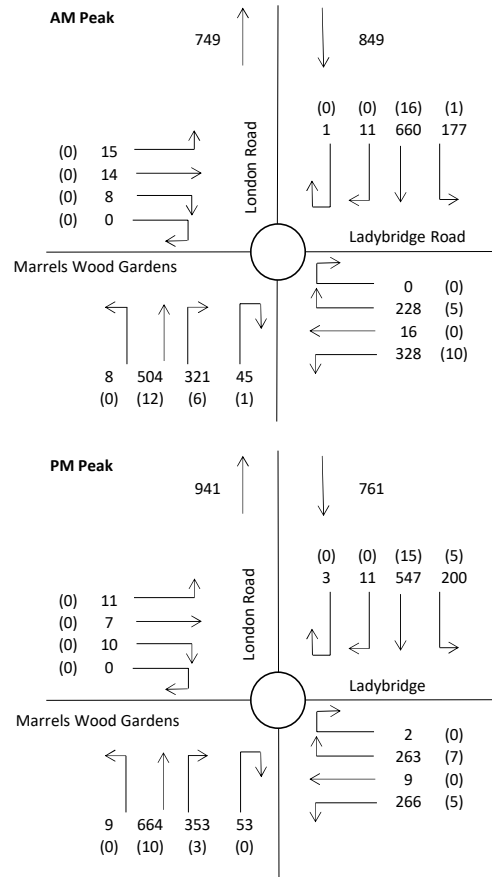
- 1.23 The capacity assessments that have been carried out for the existing Ladybridge Roundabout assume that 1,500 dwellings within the Berewood development are built out as the base scenario as this is the maximum number of dwelling permissible on the Berewood development prior to the completion of the Southern Access improvements.

Author: NE

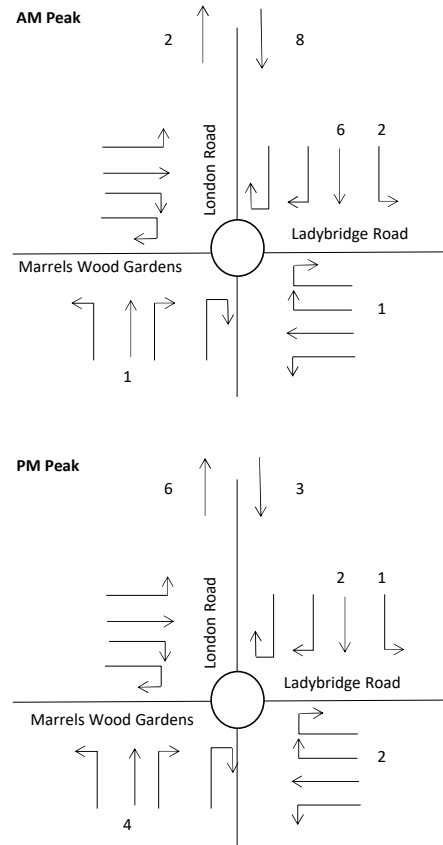
Date: 6th February 2026

DIAGRAMS

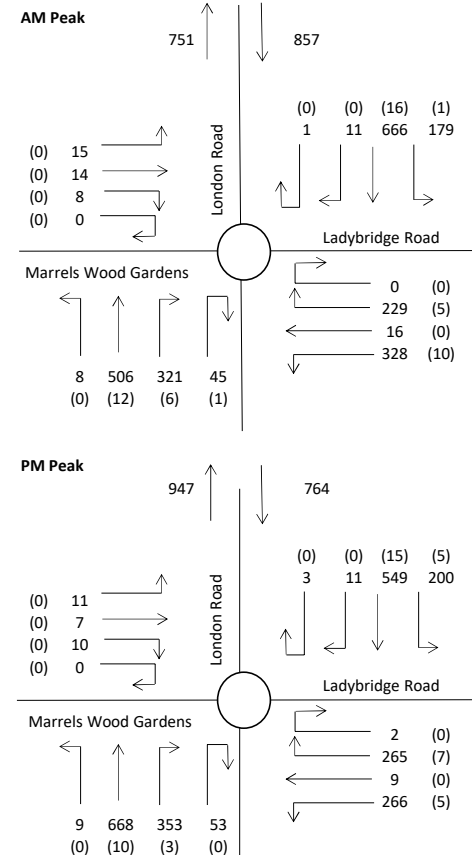
2029 Base with 1,500 Berewood Development - No SA Improvement



BSL Development Trips through the Ladybridge Roundabout



2029 Base + 1,500 Berewood Development with BSL traffic flows- No SA Improvement



Key
 29 Total Vehicles
 (3) HGVs

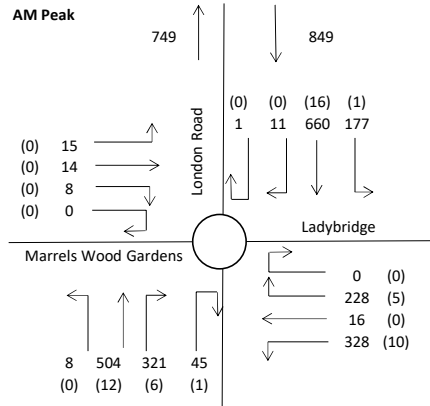


Grainger Plc
 Blus Star Land, Waterloooville

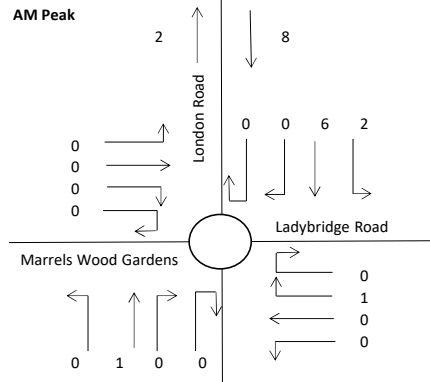
2029 Base+1,500 Berewood Dwellings + BSL Traffic Flows
 Existing Ladybridge Roundabout

Diagram: 1.1

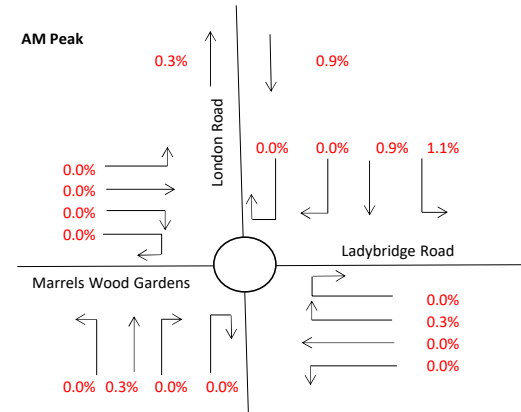
**2029 1,500 Dwellings Berewood Development
Existing Ladybridge Roundabout**



BSL Development Trips on the Approach to Ladybridge Roundabout



Impact of BSL Development Trips on the Ladybridge Roundabout



AM Peak	
Approach	Impact
London Road (N)	0.93%
Ladybridge Road	0.11%
London Road (S)	0.16%
Marrels Wood Gardens	0.00%
Junction Total	0.43%

PM Peak	
Approach	Impact
London Road (N)	0.36%
Ladybridge Road	0.33%
London Road (S)	0.39%
Marrels Wood Gardens	0.00%
Junction Total	0.36%

Key
 29 Total Vehicles
 (3) HGVs
 0.5% % Impact



Grainger Plc
 Blus Star Land, Waterloville

Impact of BSL Development Trips on the Ladybridge Roundabout

APPENDIX A: ARCADY Outputs

Junctions 11				
ARCADY 11 - Roundabout Module				
Version: 11.1.0.2307				
© Copyright TRL Software Limited, 2024				
For sales and distribution information, program advice and maintenance, contact TRL Software: +44 (0)1344 379777 software@trl.co.uk trlsoftware.com				
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Filename: 2026-01-28 Ladybridge Rbt - Existing Layout 1500 Berewood Dwellings+BSL.j11

Path: H:_Planning 2\Current Jobs\GTWVile(BSL)\Analysis\Arcady\2026-01-28 Ladybridge Roundabout 1500 Berewood Dwellings + BSL

Report generation date: 28/01/2026 15:51:20

- »D1 - 2028 | Base + 1,500 Berewood Dwellings | AM
- »D2 - 2028 | Base + 1,500 Berewood Dwellings | PM
- »D3 - 2028 | Base + 1,500 Berewood Dwellings + BSL | AM
- »D4 - 2028 | Base + 1,500 Berewood Dwellings + BSL | PM
- »D5 - 2029 | Base + 1,500 Berewood Dwellings | AM
- »D6 - 2029 | Base + 1,500 Berewood Dwellings | PM
- »D7 - 2029 | Base + 1,500 Berewood Dwellings + BSL | AM
- »D8 - 2029 | Base + 1,500 Berewood Dwellings + BSL | PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
	2028 - Base + 1,500 Berewood Dwellings									
Arm A	D1	16.0	64.72	0.97	F	D2	7.1	32.83	0.89	D
Arm B		0.8	4.50	0.44	A		0.6	3.93	0.39	A
Arm C		3.9	15.01	0.80	C		22.4	69.28	0.99	F
Arm D		0.1	9.35	0.10	A		0.1	12.86	0.10	B
	2028 - Base + 1,500 Berewood Dwellings + BSL									
Arm A	D3	17.6	69.78	0.98	F	D4	7.2	33.37	0.90	D
Arm B		0.8	4.52	0.44	A		0.6	3.94	0.39	A
Arm C		3.9	15.19	0.80	C		23.8	72.73	1.00	F
Arm D		0.1	9.17	0.09	A		0.1	12.96	0.10	B
	2029 - Base + 1,500 Berewood Dwellings									
Arm A	D5	18.0	71.24	0.98	F	D6	7.6	34.92	0.90	D
Arm B		0.8	4.55	0.44	A		0.7	3.97	0.40	A
Arm C		4.1	15.65	0.81	C		25.3	76.35	1.00	F
Arm D		0.1	9.27	0.09	A		0.1	13.03	0.10	B
	2029 - Base + 1,500 Berewood Dwellings + BSL									
Arm A	D7	19.9	77.00	0.99	F	D8	7.7	35.19	0.90	E
Arm B		0.8	4.57	0.45	A		0.7	3.98	0.40	A
Arm C		4.1	15.84	0.81	C		26.8	80.10	1.01	F
Arm D		0.1	9.31	0.10	A		0.1	13.11	0.10	B

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

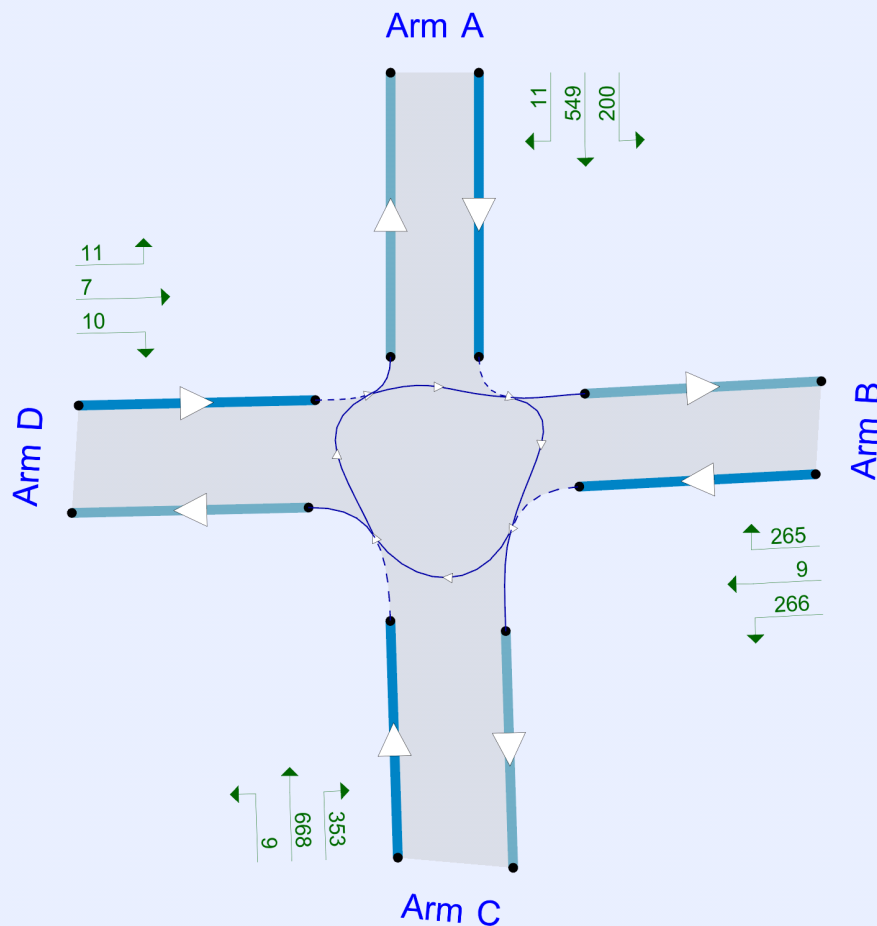
File summary

File Description

Title	Ladybridge Roundabout
Location	Waterlooville, Hampshire
Site number	
Date	28/01/2026
Version	
Status	Feasibility
Identifier	
Client	Grainger PLC
Jobnumber	GTWVile(BSL).1
Enumerator	MAYERBROWN2KIneyles
Description	Existing Layout - HCC Revised Geometry 1500 Berewood Dwellings with BSL traffic flows

Units

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



Flows show original traffic demand (Veh/hr)

The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use simulation for HCM roundabouts	Use iterations for HCM roundabouts
5.75						0.85	36.00	20.00		

Demand Set Summary

ID	Year	Scenario	Time period	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2028	Base + 1,500 Berewood Dwellings	AM	1,500 dwellings + 100% employment	ONE HOUR	07:30	09:00	15	✓
D2	2028	Base + 1,500 Berewood Dwellings	PM	1,500 dwellings + 100% employment	ONE HOUR	16:30	18:00	15	✓
D3	2028	Base + 1,500 Berewood Dwellings + BSL	AM	1,500 dwellings + 100% employment with BSL traffic flows	ONE HOUR	07:30	09:00	15	✓
D4	2028	Base + 1,500 Berewood Dwellings + BSL	PM	1,500 dwellings + 100% employment With BSL traffic flows	ONE HOUR	16:30	18:00	15	✓
D5	2029	Base + 1,500 Berewood Dwellings	AM	1,500 dwellings + 100% employment	ONE HOUR	07:30	09:00	15	✓
D6	2029	Base + 1,500 Berewood Dwellings	PM	1,500 dwellings + 100% employment	ONE HOUR	16:30	18:00	15	✓
D7	2029	Base + 1,500 Berewood Dwellings + BSL	AM	1,500 dwellings + 100% employment with BSL traffic flows	ONE HOUR	07:30	09:00	15	✓
D8	2029	Base + 1,500 Berewood Dwellings + BSL	PM	1,500 dwellings + 100% employment With BSL traffic flows	ONE HOUR	16:30	18:00	15	✓

Analysis Set Details

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

D1 - 2028 | Base + 1,500 Berewood Dwellings | AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Southern Access Roundabout	Standard Roundabout		A, B, C, D	30.36	D

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	30.36	D

Arms

Arms

Arm	Name	Description	No give-way line
A	London Road (N)		
B	Ladybridge Road		
C	London Road (S)		
D	Marrells Wood Gardens		

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
A	3.50	4.30	15.0	10.0	21.5	30.0		
B	5.80	7.10	6.0	20.0	22.1	20.0		
C	3.40	5.20	15.0	10.0	21.3	22.5		
D	2.30	5.80	7.0	11.5	21.7	24.0		

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.546	1206
B	0.749	2059
C	0.593	1392
D	0.533	1088

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

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2028	Base + 1,500 Berewood Dwellings	AM	1,500 dwellings + 100% employment	ONE HOUR	07:30	09:00	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	842	100.000
B		ONE HOUR	✓	567	100.000
C		ONE HOUR	✓	870	100.000
D		ONE HOUR	✓	37	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
	A	B	C	D	
From	A	1	176	654	11
	B	226	0	325	16
	C	500	318	44	8
	D	15	14	8	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

	To				
	A	B	C	D	
From	A	0	0.60	2	0
	B	2	0	3	0
	C	3	2	2	0
	D	3	2	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A	0.97	64.72	16.0	F	773	1159
B	0.44	4.50	0.8	A	520	780
C	0.80	15.01	3.9	C	798	1197
D	0.10	9.35	0.1	A	34	51

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	634	158	287	1025	0.618	628	555	0.0	1.6	8.919	A
B	427	107	535	1605	0.266	425	379	0.0	0.4	3.048	A
C	655	164	191	1248	0.525	651	770	0.0	1.1	5.981	A
D	28	7	815	630	0.044	28	26	0.0	0.0	5.976	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	757	189	344	994	0.761	751	665	1.6	3.0	14.485	B
B	510	127	641	1526	0.334	509	455	0.4	0.5	3.538	A
C	782	196	228	1226	0.638	780	922	1.1	1.7	8.015	A
D	33	8	976	544	0.061	33	31	0.0	0.1	7.047	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	927	232	419	953	0.973	890	812	3.0	12.2	42.683	E
B	624	156	761	1437	0.435	623	549	0.5	0.8	4.421	A
C	958	239	279	1196	0.801	950	1105	1.7	3.7	14.164	B
D	41	10	1191	430	0.095	41	38	0.1	0.1	9.245	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	927	232	423	951	0.975	912	817	12.2	16.0	64.723	F
B	624	156	778	1424	0.439	624	556	0.8	0.8	4.503	A
C	958	239	279	1196	0.801	957	1123	3.7	3.9	15.009	C
D	41	10	1198	426	0.096	41	38	0.1	0.1	9.353	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	757	189	349	992	0.763	807	672	16.0	3.5	23.843	C
B	510	127	686	1493	0.341	511	470	0.8	0.5	3.671	A
C	782	196	229	1225	0.638	790	967	3.9	1.8	8.427	A
D	33	8	988	538	0.062	33	32	0.1	0.1	7.139	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	634	158	290	1023	0.619	641	560	3.5	1.7	9.587	A
B	427	107	546	1597	0.267	427	385	0.5	0.4	3.080	A
C	655	164	192	1248	0.525	658	782	1.8	1.1	6.129	A
D	28	7	823	626	0.045	28	26	0.1	0.0	6.024	A

D2 - 2028 | Base + 1,500 Berewood Dwellings | PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Southern Access Roundabout	Standard Roundabout		A, B, C, D	42.33	E

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	42.33	E

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2028	Base + 1,500 Berewood Dwellings	PM	1,500 dwellings + 100% employment	ONE HOUR	16:30	18:00	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	755	100.000
B		ONE HOUR	✓	535	100.000
C		ONE HOUR	✓	1070	100.000
D		ONE HOUR	✓	28	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
		A	B	C	D
From	A	3	198	543	11
	B	261	2	263	9
	C	659	350	52	9
	D	11	7	10	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

	To				
		A	B	C	D
	A	0	3	3	0
	B	3	0	2	0
	C	2	0.90	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A	0.89	32.83	7.1	D	693	1039
B	0.39	3.93	0.6	A	491	736
C	0.99	69.28	22.4	F	982	1473
D	0.10	12.86	0.1	B	26	39

Main Results for each time segment

16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	568	142	314	1006	0.565	563	698	0.0	1.3	8.039	A
B	403	101	462	1666	0.242	402	416	0.0	0.3	2.844	A
C	806	201	215	1245	0.647	798	649	0.0	1.8	7.936	A
D	21	5	991	552	0.038	21	22	0.0	0.0	6.782	A

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	679	170	376	973	0.697	675	835	1.3	2.2	11.921	B
B	481	120	553	1598	0.301	481	497	0.3	0.4	3.220	A
C	962	240	257	1220	0.789	955	777	1.8	3.5	13.253	B
D	25	6	1186	446	0.056	25	26	0.0	0.1	8.547	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	831	208	444	936	0.888	815	996	2.2	6.3	26.679	D
B	589	147	667	1512	0.389	588	592	0.4	0.6	3.892	A
C	1178	295	314	1185	0.994	1127	941	3.5	16.2	42.797	E
D	31	8	1410	325	0.095	31	31	0.1	0.1	12.226	B

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	831	208	454	931	0.893	828	1013	6.3	7.1	32.827	D
B	589	147	678	1504	0.392	589	604	0.6	0.6	3.932	A
C	1178	295	315	1185	0.994	1153	952	16.2	22.4	69.284	F
D	31	8	1437	311	0.099	31	32	0.1	0.1	12.864	B

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	679	170	406	957	0.709	697	885	7.1	2.6	14.717	B
B	481	120	573	1583	0.304	482	530	0.6	0.4	3.274	A
C	962	240	258	1219	0.789	1035	797	22.4	4.1	25.726	D
D	25	6	1266	403	0.062	25	27	0.1	0.1	9.535	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	568	142	320	1003	0.567	573	709	2.6	1.3	8.471	A
B	403	101	470	1660	0.243	403	424	0.4	0.3	2.867	A
C	806	201	216	1245	0.647	814	658	4.1	1.9	8.530	A
D	21	5	1008	543	0.039	21	22	0.1	0.0	6.905	A

D3 - 2028 | Base + 1,500 Berewood Dwellings + BSL | AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Southern Access Roundabout	Standard Roundabout		A, B, C, D	32.36	D

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	32.36	D

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2028	Base + 1,500 Berewood Dwellings + BSL	AM	1,500 dwellings + 100% employment with BSL traffic flows	ONE HOUR	07:30	09:00	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	850	100.000
B		ONE HOUR	✓	568	100.000
C		ONE HOUR	✓	872	100.000
D		ONE HOUR	✓	37	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	1	178	660	11
	B	227	0	325	16
	C	502	318	44	8
	D	15	14	8	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To				
		A	B	C	D
	A	0	0.60	2	0
	B	2	0	3	0
	C	3	2	2	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A	0.98	69.78	17.6	F	780	1170
B	0.44	4.52	0.8	A	521	782
C	0.80	15.19	3.9	C	800	1200
D	0.09	9.17	0.1	A	34	51

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	640	160	287	1026	0.624	633	558	0.0	1.6	9.027	A
B	428	107	540	1602	0.267	426	381	0.0	0.4	3.057	A
C	656	164	191	1248	0.526	652	775	0.0	1.1	6.001	A
D	28	7	817	643	0.043	28	26	0.0	0.0	5.851	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	764	191	344	995	0.768	758	668	1.6	3.1	14.827	B
B	511	128	646	1523	0.335	510	456	0.4	0.5	3.552	A
C	784	196	229	1226	0.640	781	927	1.1	1.7	8.056	A
D	33	8	979	555	0.060	33	31	0.0	0.1	6.903	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	936	234	419	954	0.981	896	815	3.1	13.1	44.805	E
B	625	156	765	1434	0.436	624	550	0.5	0.8	4.440	A
C	960	240	280	1196	0.803	952	1110	1.7	3.8	14.311	B
D	41	10	1194	438	0.093	41	38	0.1	0.1	9.066	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	936	234	423	952	0.983	918	820	13.1	17.6	69.780	F
B	625	156	783	1421	0.440	625	558	0.8	0.8	4.524	A
C	960	240	280	1195	0.803	960	1128	3.8	3.9	15.187	C
D	41	10	1202	433	0.094	41	38	0.1	0.1	9.169	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	764	191	349	993	0.770	820	675	17.6	3.6	26.215	D
B	511	128	696	1486	0.344	512	473	0.8	0.5	3.697	A
C	784	196	230	1225	0.640	792	977	3.9	1.8	8.482	A
D	33	8	990	548	0.061	33	32	0.1	0.1	6.992	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	640	160	290	1024	0.625	648	563	3.6	1.7	9.739	A
B	428	107	551	1593	0.268	428	387	0.5	0.4	3.093	A
C	656	164	192	1247	0.526	659	787	1.8	1.1	6.150	A
D	28	7	825	638	0.044	28	26	0.1	0.0	5.899	A

D4 - 2028 | Base + 1,500 Berewood Dwellings + BSL | PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Southern Access Roundabout	Standard Roundabout		A, B, C, D	44.05	E

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	44.05	E

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2028	Base + 1,500 Berewood Dwellings + BSL	PM	1,500 dwellings + 100% employment With BSL traffic flows	ONE HOUR	16:30	18:00	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	758	100.000
B		ONE HOUR	✓	537	100.000
C		ONE HOUR	✓	1074	100.000
D		ONE HOUR	✓	28	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
	A	B	C	D	
From	A	3	199	545	11
	B	263	2	263	9
	C	663	350	52	9
	D	11	7	10	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To				
		A	B	C	D
	A	0	3	3	0
	B	3	0	2	0
	C	2	0.90	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A	0.90	33.37	7.2	D	696	1043
B	0.39	3.94	0.6	A	493	739
C	1.00	72.73	23.8	F	986	1478
D	0.10	12.96	0.1	B	26	39

Main Results for each time segment

16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	571	143	314	1007	0.567	566	703	0.0	1.3	8.066	A
B	404	101	463	1666	0.243	403	416	0.0	0.3	2.848	A
C	809	202	216	1244	0.650	801	650	0.0	1.8	8.000	A
D	21	5	996	549	0.038	21	22	0.0	0.0	6.812	A

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	681	170	376	974	0.700	678	840	1.3	2.2	11.995	B
B	483	121	555	1597	0.302	482	498	0.3	0.4	3.226	A
C	966	241	259	1219	0.792	958	779	1.8	3.6	13.457	B
D	25	6	1191	444	0.057	25	26	0.0	0.1	8.603	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	835	209	443	938	0.890	818	1001	2.2	6.4	26.996	D
B	591	148	669	1512	0.391	590	593	0.4	0.6	3.902	A
C	1182	296	316	1184	0.999	1129	943	3.6	16.9	44.171	E
D	31	8	1414	323	0.095	31	31	0.1	0.1	12.310	B

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	835	209	453	932	0.895	831	1018	6.4	7.2	33.371	D
B	591	148	680	1504	0.393	591	605	0.6	0.6	3.943	A
C	1182	296	317	1184	0.999	1155	954	16.9	23.8	72.734	F
D	31	8	1441	309	0.100	31	32	0.1	0.1	12.957	B

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	681	170	408	957	0.712	700	894	7.2	2.6	14.941	B
B	483	121	576	1582	0.305	484	532	0.6	0.4	3.279	A
C	966	241	260	1218	0.793	1044	800	23.8	4.2	27.754	D
D	25	6	1277	397	0.063	25	27	0.1	0.1	9.679	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	571	143	320	1004	0.569	576	714	2.6	1.3	8.510	A
B	404	101	472	1660	0.244	405	424	0.4	0.3	2.869	A
C	809	202	217	1244	0.650	818	659	4.2	1.9	8.621	A
D	21	5	1013	540	0.039	21	22	0.1	0.0	6.941	A

D5 - 2029 | Base + 1,500 Berewood Dwellings | AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Southern Access Roundabout	Standard Roundabout		A, B, C, D	32.98	D

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	32.98	D

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2029	Base + 1,500 Berewood Dwellings	AM	1,500 dwellings + 100% employment	ONE HOUR	07:30	09:00	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	849	100.000
B		ONE HOUR	✓	572	100.000
C		ONE HOUR	✓	878	100.000
D		ONE HOUR	✓	37	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
		A	B	C	D
From	A	1	177	660	11
	B	228	0	328	16
	C	504	321	45	8
	D	15	14	8	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To				
		A	B	C	D
	A	0	0.60	2	0
	B	2	0	3	0
	C	3	2	2	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A	0.98	71.24	18.0	F	779	1169
B	0.44	4.55	0.8	A	525	787
C	0.81	15.65	4.1	C	806	1208
D	0.09	9.27	0.1	A	34	51

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	639	160	290	1024	0.624	633	560	0.0	1.6	9.064	A
B	431	108	540	1601	0.269	429	382	0.0	0.4	3.067	A
C	661	165	192	1247	0.530	657	778	0.0	1.1	6.049	A
D	28	7	822	640	0.044	28	26	0.0	0.0	5.878	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	763	191	348	992	0.769	757	671	1.6	3.1	14.932	B
B	514	129	647	1522	0.338	514	458	0.4	0.5	3.569	A
C	789	197	230	1225	0.644	787	931	1.1	1.8	8.162	A
D	33	8	985	551	0.060	33	31	0.0	0.1	6.948	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	935	234	424	951	0.983	894	818	3.1	13.3	45.427	E
B	630	157	766	1433	0.439	629	552	0.5	0.8	4.469	A
C	967	242	281	1195	0.809	958	1113	1.8	3.9	14.692	B
D	41	10	1201	434	0.094	41	38	0.1	0.1	9.151	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	935	234	427	949	0.985	916	823	13.3	18.0	71.245	F
B	630	157	783	1420	0.444	630	560	0.8	0.8	4.555	A
C	967	242	282	1194	0.809	966	1131	3.9	4.1	15.653	C
D	41	10	1209	429	0.095	41	38	0.1	0.1	9.267	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	763	191	353	990	0.771	821	678	18.0	3.7	26.940	D
B	514	129	698	1484	0.347	515	476	0.8	0.5	3.719	A
C	789	197	231	1224	0.645	798	981	4.1	1.9	8.618	A
D	33	8	997	545	0.061	33	32	0.1	0.1	7.044	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	639	160	293	1022	0.625	647	565	3.7	1.7	9.792	A
B	431	108	552	1592	0.270	431	388	0.5	0.4	3.104	A
C	661	165	193	1247	0.530	664	790	1.9	1.1	6.205	A
D	28	7	830	636	0.044	28	26	0.1	0.0	5.925	A

D6 - 2029 | Base + 1,500 Berewood Dwellings | PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Southern Access Roundabout	Standard Roundabout		A, B, C, D	46.15	E

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	46.15	E

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2029	Base + 1,500 Berewood Dwellings	PM	1,500 dwellings + 100% employment	ONE HOUR	16:30	18:00	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	761	100.000
B		ONE HOUR	✓	540	100.000
C		ONE HOUR	✓	1079	100.000
D		ONE HOUR	✓	28	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
		A	B	C	D
From	A	3	200	547	11
	B	263	2	266	9
	C	664	353	53	9
	D	11	7	10	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To				
		A	B	C	D
	A	0	3	3	0
	B	3	0	2	0
	C	2	0.90	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A	0.90	34.92	7.6	D	698	1047
B	0.40	3.97	0.7	A	496	743
C	1.00	76.35	25.3	F	990	1485
D	0.10	13.03	0.1	B	26	39

Main Results for each time segment

16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	573	143	317	1005	0.570	568	703	0.0	1.3	8.145	A
B	407	102	466	1663	0.244	405	419	0.0	0.3	2.859	A
C	812	203	216	1244	0.653	805	655	0.0	1.8	8.065	A
D	21	5	999	547	0.039	21	22	0.0	0.0	6.839	A

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	684	171	379	971	0.704	680	841	1.3	2.3	12.200	B
B	485	121	558	1594	0.304	485	502	0.3	0.4	3.243	A
C	970	242	259	1219	0.796	963	784	1.8	3.6	13.679	B
D	25	6	1195	441	0.057	25	26	0.0	0.1	8.650	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	838	209	447	935	0.896	820	1001	2.3	6.6	27.903	D
B	595	149	671	1509	0.394	594	596	0.4	0.6	3.929	A
C	1188	297	316	1184	1.003	1132	949	3.6	17.7	45.586	E
D	31	8	1417	321	0.096	31	31	0.1	0.1	12.378	B

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	838	209	457	930	0.901	834	1017	6.6	7.6	34.921	D
B	595	149	683	1501	0.396	595	608	0.6	0.7	3.972	A
C	1188	297	317	1184	1.004	1158	960	17.7	25.3	76.348	F
D	31	8	1443	307	0.100	31	32	0.1	0.1	13.028	B

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	684	171	414	953	0.718	704	898	7.6	2.7	15.477	C
B	485	121	580	1578	0.308	486	538	0.7	0.4	3.299	A
C	970	242	260	1218	0.796	1054	806	25.3	4.3	30.126	D
D	25	6	1287	392	0.064	25	27	0.1	0.1	9.824	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	573	143	324	1001	0.572	578	715	2.7	1.4	8.612	A
B	407	102	474	1657	0.245	407	428	0.4	0.3	2.883	A
C	812	203	217	1244	0.653	822	664	4.3	1.9	8.716	A
D	21	5	1017	538	0.039	21	22	0.1	0.0	6.973	A

D7 - 2029 | Base + 1,500 Berewood Dwellings + BSL | AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Southern Access Roundabout	Standard Roundabout		A, B, C, D	35.24	E

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	35.24	E

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2029	Base + 1,500 Berewood Dwellings + BSL	AM	1,500 dwellings + 100% employment with BSL traffic flows	ONE HOUR	07:30	09:00	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	857	100.000
B		ONE HOUR	✓	573	100.000
C		ONE HOUR	✓	880	100.000
D		ONE HOUR	✓	37	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
	A	B	C	D	
From	A	1	179	666	11
	B	229	0	328	16
	C	506	321	45	8
	D	15	14	8	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

	To				
		A	B	C	D
From	A	0	0.60	2	0
	B	2	0	3	0
	C	3	2	2	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A	0.99	77.00	19.9	F	786	1180
B	0.45	4.57	0.8	A	526	789
C	0.81	15.84	4.1	C	808	1211
D	0.10	9.31	0.1	A	34	51

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	645	161	290	1025	0.630	639	562	0.0	1.7	9.178	A
B	431	108	545	1598	0.270	430	384	0.0	0.4	3.077	A
C	663	166	193	1247	0.531	658	782	0.0	1.1	6.067	A
D	28	7	825	639	0.044	28	26	0.0	0.0	5.890	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	770	193	348	993	0.776	764	673	1.7	3.2	15.305	C
B	515	129	652	1518	0.339	515	460	0.4	0.5	3.584	A
C	791	198	231	1225	0.646	788	936	1.1	1.8	8.204	A
D	33	8	988	550	0.061	33	31	0.0	0.1	6.968	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	944	236	423	952	0.991	899	821	3.2	14.3	47.770	E
B	631	158	769	1431	0.441	630	553	0.5	0.8	4.488	A
C	969	242	282	1194	0.811	960	1117	1.8	4.0	14.846	B
D	41	10	1204	432	0.094	41	38	0.1	0.1	9.194	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	944	236	427	950	0.993	921	826	14.3	19.9	77.005	F
B	631	158	787	1418	0.445	631	561	0.8	0.8	4.575	A
C	969	242	283	1194	0.812	968	1135	4.0	4.1	15.842	C
D	41	10	1213	427	0.095	41	38	0.1	0.1	9.310	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	770	193	353	990	0.778	835	681	19.9	3.8	30.162	D
B	515	129	708	1476	0.349	516	479	0.8	0.5	3.755	A
C	791	198	232	1224	0.647	800	992	4.1	1.9	8.673	A
D	33	8	1000	543	0.061	33	32	0.1	0.1	7.066	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	645	161	293	1023	0.631	654	567	3.8	1.8	9.961	A
B	431	108	557	1589	0.271	432	390	0.5	0.4	3.115	A
C	663	166	194	1246	0.532	665	795	1.9	1.2	6.226	A
D	28	7	833	634	0.044	28	27	0.1	0.0	5.939	A

D8 - 2029 | Base + 1,500 Berewood Dwellings + BSL | PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Southern Access Roundabout	Standard Roundabout		A, B, C, D	47.92	E

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	47.92	E

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2029	Base + 1,500 Berewood Dwellings + BSL	PM	1,500 dwellings + 100% employment With BSL traffic flows	ONE HOUR	16:30	18:00	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	763	100.000
B		ONE HOUR	✓	542	100.000
C		ONE HOUR	✓	1083	100.000
D		ONE HOUR	✓	28	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
		A	B	C	D
	A	3	200	549	11
	B	265	2	266	9
	C	668	353	53	9
	D	11	7	10	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To				
		A	B	C	D
	A	0	3	3	0
	B	3	0	2	0
	C	2	0.90	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
A	0.90	35.19	7.7	E	700	1050
B	0.40	3.98	0.7	A	497	746
C	1.01	80.10	26.8	F	994	1491
D	0.10	13.11	0.1	B	26	39

Main Results for each time segment

16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	574	144	317	1005	0.571	569	708	0.0	1.3	8.161	A
B	408	102	467	1663	0.245	407	419	0.0	0.3	2.862	A
C	815	204	218	1244	0.656	808	656	0.0	1.9	8.132	A
D	21	5	1004	545	0.039	21	22	0.0	0.0	6.869	A

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	686	171	379	972	0.706	682	846	1.3	2.3	12.241	B
B	487	122	559	1594	0.306	487	502	0.3	0.4	3.249	A
C	974	243	260	1218	0.799	966	786	1.9	3.7	13.897	B
D	25	6	1201	438	0.057	25	26	0.0	0.1	8.706	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	840	210	446	936	0.897	823	1006	2.3	6.7	28.059	D
B	597	149	673	1509	0.396	596	595	0.4	0.6	3.940	A
C	1192	298	319	1183	1.008	1133	951	3.7	18.5	47.042	E
D	31	8	1421	319	0.097	31	31	0.1	0.1	12.459	B

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	840	210	455	931	0.902	836	1022	6.7	7.7	35.188	E
B	597	149	685	1500	0.398	597	607	0.6	0.7	3.983	A
C	1192	298	319	1183	1.008	1159	962	18.5	26.8	80.100	F
D	31	8	1447	305	0.101	31	32	0.1	0.1	13.113	B

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	686	171	416	952	0.720	706	907	7.7	2.7	15.645	C
B	487	122	582	1577	0.309	488	540	0.7	0.4	3.309	A
C	974	243	261	1217	0.800	1063	808	26.8	4.4	32.817	D
D	25	6	1298	386	0.065	25	27	0.1	0.1	9.982	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
A	574	144	324	1002	0.573	580	719	2.7	1.4	8.634	A
B	408	102	476	1657	0.246	409	428	0.4	0.3	2.886	A
C	815	204	219	1243	0.656	825	666	4.4	2.0	8.812	A
D	21	5	1022	535	0.039	21	22	0.1	0.0	7.008	A