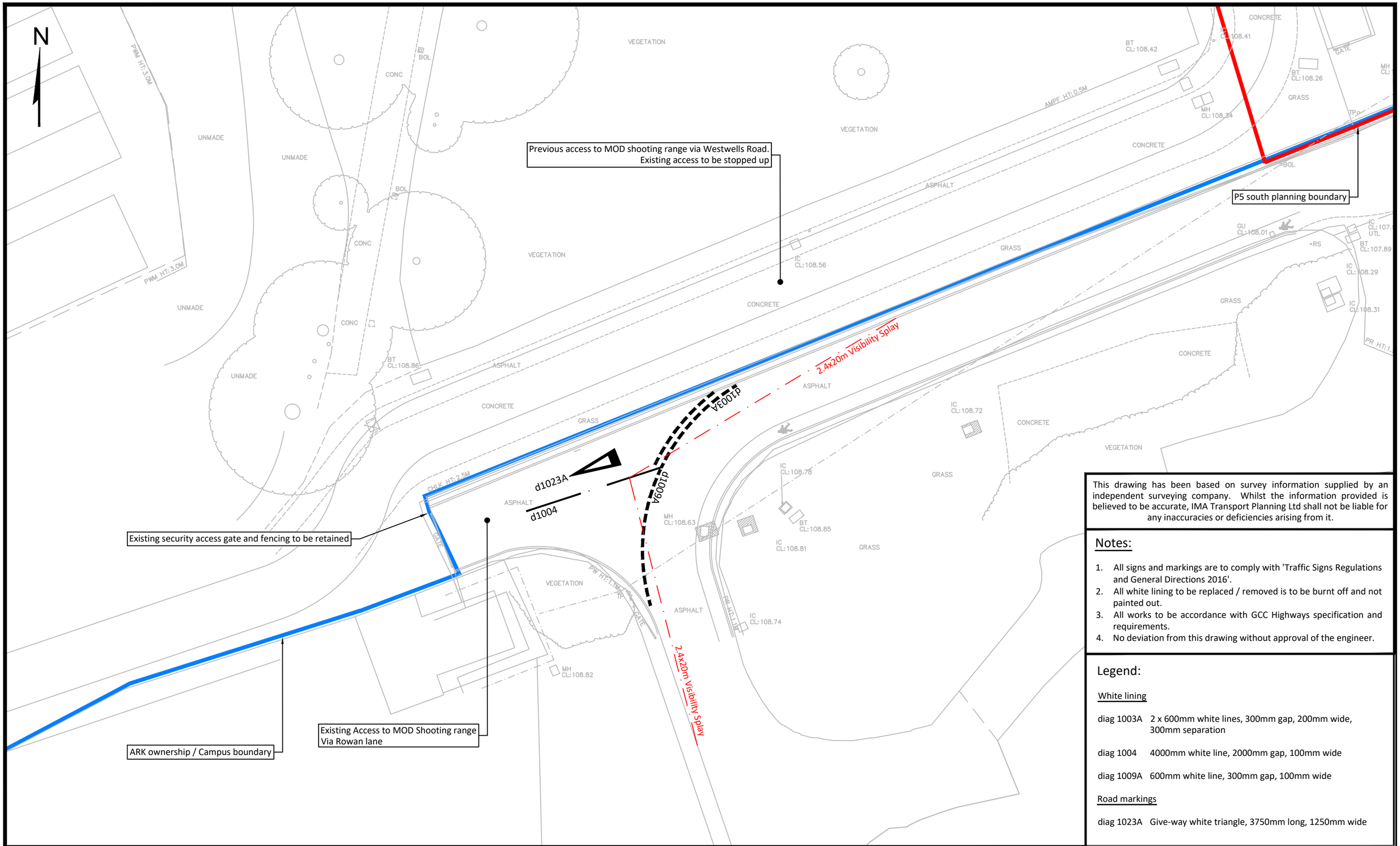
Appendix 4



This drawing has been based on survey information supplied by an independent surveying company. Whilst the information provided is believed to be accurate, IMA Transport Planning Ltd shall not be liable for any inaccuracies or deficiencies arising from it.

Notes:

1. All signs and markings are to comply with 'Traffic Signs Regulations and General Directions 2016'.
2. All white lining to be replaced / removed is to be burnt off and not painted out.
3. All works to be accordance with GCC Highways specification and requirements.
4. No deviation from this drawing without approval of the engineer.

Legend:

White lining

diag 1003A	2 x 600mm white lines, 300mm gap, 200mm wide, 300mm separation
diag 1004	4000mm white line, 2000mm gap, 100mm wide
diag 1009A	600mm white line, 300mm gap, 100mm wide

Road markings

diag 1023A	Give-way white triangle, 3750mm long, 1250mm wide

IMA TRANSPORT PLANNING
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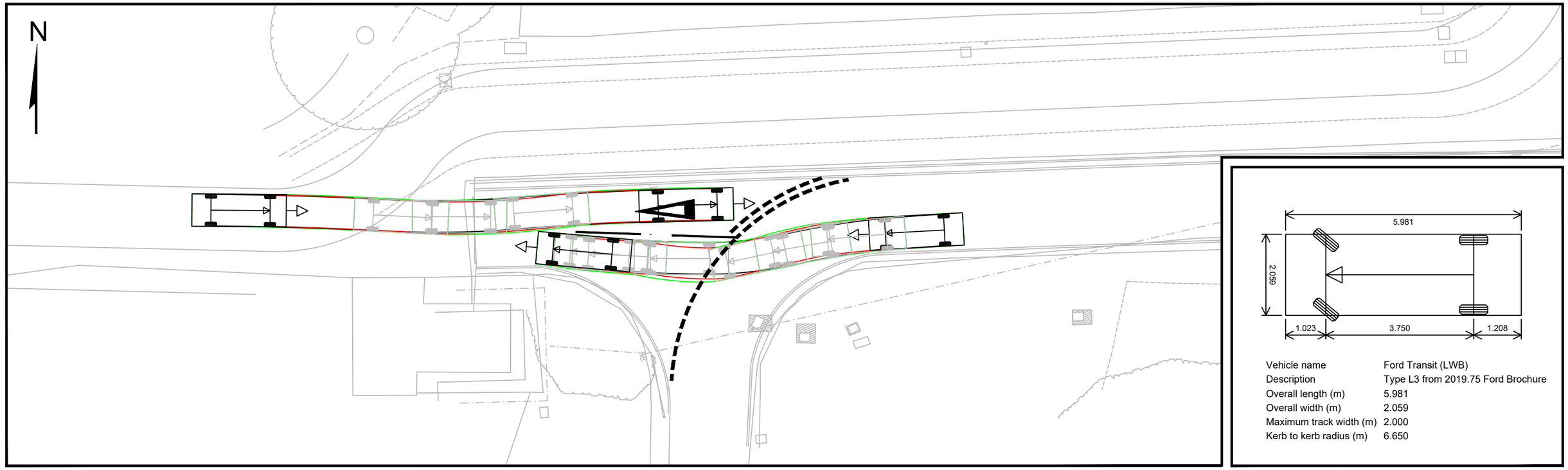
CLIENT: Ark Continuity

PROJECT: Spring Park Data Centre Phase 5 South

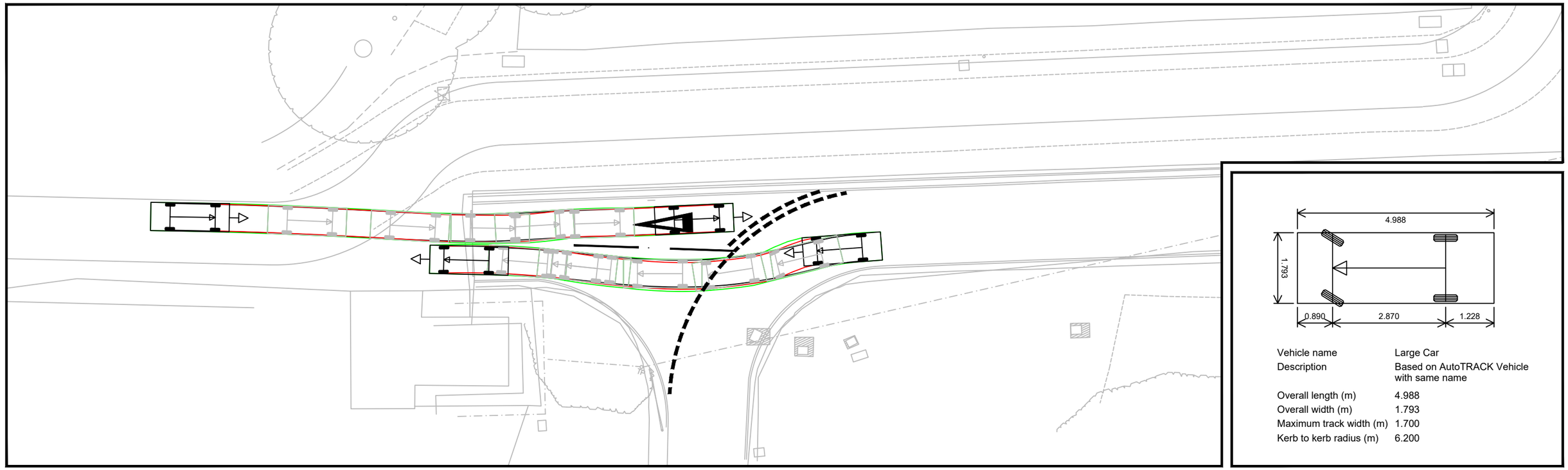
TITLE: Existing Access to MOD Shooting Range Road Markings and White Lining

SCALE: (A3) 1:250	CHECKED: DS	APPROVED: DS
CAD FILE: IMA-21-154_D-1202.dwg	DESIGN/DRAWN: PDI	DATE: October 2022
PROJECT No: IMA-21-154	DRAWING No: D-1202	REV: -

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Vehicle name	Ford Transit (LWB)
Description	Type L3 from 2019.75 Ford Brochure
Overall length (m)	5.981
Overall width (m)	2.059
Maximum track width (m)	2.000
Kerb to kerb radius (m)	6.650



Vehicle name	Large Car
Description	Based on AutoTRACK Vehicle with same name
Overall length (m)	4.988
Overall width (m)	1.793
Maximum track width (m)	1.700
Kerb to kerb radius (m)	6.200

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CLIENT: Ark Continuity

PROJECT: Spring Park Data Centre Phase 5 South

TITLE: Existing Access to MOD Shooting Range Swept Path Analysis

SCALE: (A3) 1:250	CHECKED: DS	APPROVED: DS
CAD FILE: IMA-21-154_D-TR01.dwg	DESIGN/DRAWN: PDI	DATE: October 2022
PROJECT No: IMA-21-154	DRAWING No: D-TR01	REV: -

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Appendix 5

Suzanne Nixon

From: [redacted]
Sent: 03 June 2022 11:10
To: Jeremy Moore
Subject: FW: Firing Range Access

From: [redacted]
Sent: 01 June 2022 12:13
To: Seamus Quinn <[redacted]>
Subject: Firing Range Access

This message originated from outside your organization

Seamus,

I can confirm that MoD Corsham has a requirement to access the firing range via Rowan Lane approximately 7 times a month.

This is would be twice per month for maintenance/inspection purposes and 5 times per month for actual use of the firing range.

We would envisage no more than two vehicles accessing the range on each occasion.

Regards,

Nigel Spreadbury-Clews
DD HoE
D3 Bldg 405
MoD Corsham
[redacted]

FOR INFORMATION I WILL BE RETIRING FROM MoD ON THE 1ST AUGUST 2022

Appendix 6

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462
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For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: Westwills Dbl Mini_v2-0.j9
Path: P:\2023\IMA-23-021 Spring Park P5 N&S S73 Application\Assessments\Westwills Dbl Mini
Report generation date: 04/07/2023 15:02:17

»Flows - 2019 Survey, AM
»Flows - 2019 Survey, PM
»Flows - 2028 Baseline, AM
»Flows - 2028 Baseline, PM
»Flows - 2028 with Development, AM
»Flows - 2028 with Development, PM
»Flows - Sensitivity Test (2028 With Development), AM
»Flows - Sensitivity Test (2028 With Development), PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	RFC	Network Residual Capacity
Flows - 2019 Survey										
1 - Bradford-Leafy Junction - A - Linked Arm	D1	0.8	5.12	0.44	29 % [1 - Bradford-Leafy Junction - C - Leafy Lane]	D2	1.8	7.99	0.64	30 % [2 - Bradford-Westwells Junction - B - Westwells Road]
1 - Bradford-Leafy Junction - B - Bradford Road (S)		1.9	11.35	0.66			0.7	6.81	0.40	
1 - Bradford-Leafy Junction - C - Leafy Lane		0.7	13.87	0.42			0.4	8.01	0.27	
2 - Bradford-Westwells Junction - A - Bradford Road (N)		0.8	6.86	0.45			0.7	5.75	0.40	
2 - Bradford-Westwells Junction - B - Westwells Road		0.4	6.25	0.29			1.6	11.54	0.61	
2 - Bradford-Westwells Junction - C - Linked Arm		1.4	6.69	0.59			0.6	4.33	0.36	
Flows - 2028 Baseline										
1 - Bradford-Leafy Junction - A - Linked Arm	D3	1.2	6.31	0.55	10 % [1 - Bradford-Leafy Junction - C - Leafy Lane]	D4	3.0	11.53	0.75	8 % [2 - Bradford-Westwells Junction - B - Westwells Road]
1 - Bradford-Leafy Junction - B - Bradford Road (S)		3.3	17.46	0.77			0.9	8.08	0.48	
1 - Bradford-Leafy Junction - C - Leafy Lane		1.4	21.81	0.59			0.6	9.98	0.38	
2 - Bradford-Westwells Junction - A - Bradford Road (N)		1.2	8.94	0.55			0.9	6.74	0.46	
2 - Bradford-Westwells Junction - B - Westwells Road		0.7	8.02	0.43			3.6	21.82	0.79	
2 - Bradford-Westwells Junction - C - Linked Arm		2.2	8.83	0.69			0.8	5.08	0.45	
Flows - 2028 with Development										
1 - Bradford-Leafy Junction - A - Linked Arm	D5	1.2	6.38	0.55	7 % [1 - Bradford-Leafy Junction - C - Leafy Lane]	D6	3.2	12.21	0.77	4 % [2 - Bradford-Westwells Junction - B - Westwells Road]
1 - Bradford-Leafy Junction - B - Bradford Road (S)		3.6	18.99	0.79			0.9	8.16	0.48	
1 - Bradford-Leafy Junction - C - Leafy Lane		1.6	24.01	0.62			0.6	10.04	0.39	
2 - Bradford-Westwells Junction - A - Bradford Road (N)		1.4	9.60	0.58			0.9	6.79	0.47	
2 - Bradford-Westwells Junction - B - Westwells Road		0.8	8.22	0.44			4.6	26.52	0.83	
2 - Bradford-Westwells Junction - C - Linked Arm		2.3	9.41	0.70			0.8	5.16	0.45	
Flows - Sensitivity Test (2028 With Development)										
1 - Bradford-Leafy Junction - A - Linked Arm	D7	1.2	6.35	0.55	7 % [1 - Bradford-Leafy Junction - C - Leafy Lane]	D8	3.2	12.21	0.77	4 % [2 - Bradford-Westwells Junction - B - Westwells Road]
1 - Bradford-Leafy Junction - B - Bradford Road (S)		3.7	19.43	0.80			0.9	8.18	0.48	
1 - Bradford-Leafy Junction - C - Leafy Lane		1.6	24.79	0.63			0.6	10.06	0.39	
2 - Bradford-Westwells Junction - A - Bradford Road (N)		1.4	9.84	0.59			0.9	6.82	0.47	
2 - Bradford-Westwells Junction - B - Westwells Road		0.8	8.14	0.44			4.6	26.52	0.83	
2 - Bradford-Westwells Junction - C - Linked Arm		2.4	9.53	0.71			0.8	5.17	0.45	

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

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

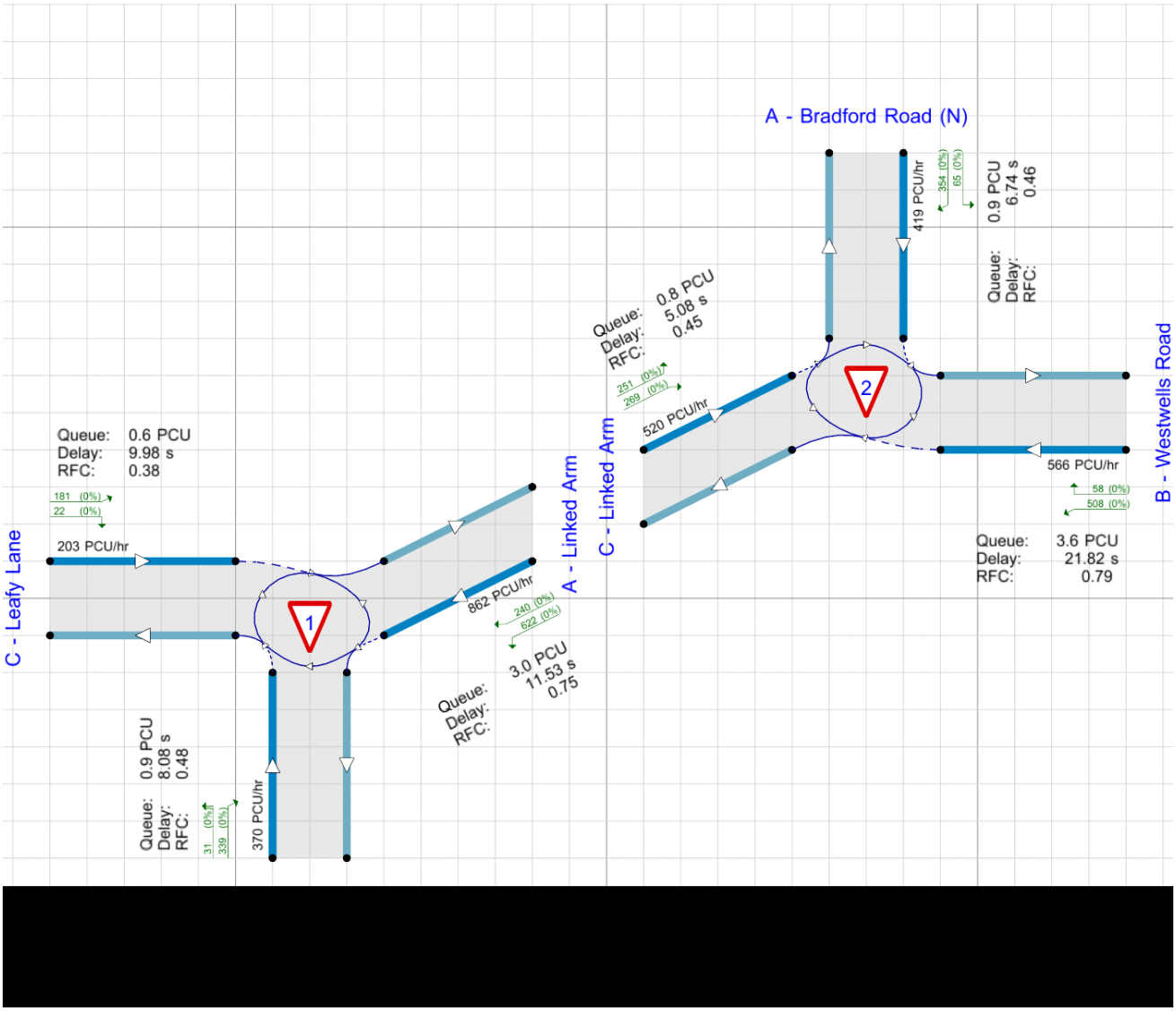
File summary

File Description

Title	Bradford-Leafy Min Rbt
Location	Corsham, Wiltshire
Site number	
Date	13/02/2013
Version	v2
Status	(new file)
Identifier	
Client	Ark Continuity
Jobnumber	IMA-12-096
Enumerator	IMA-TP\Sysadmin
Description	Model of existing double mini roundabout junction between Bradford Road/Leafy Lane and Westwells Road

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

Mini-roundabout model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
JUNCTIONS 9	5.75			✓	Delay	0.90	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
D1	2019 Survey	AM	ONE HOUR	07:45	09:15	15	✓
D2	2019 Survey	PM	ONE HOUR	16:45	18:15	15	✓
D3	2028 Baseline	AM	ONE HOUR	07:45	09:15	15	✓
D4	2028 Baseline	PM	ONE HOUR	16:45	18:15	15	✓
D5	2028 with Development	AM	ONE HOUR	07:45	09:15	15	✓
D6	2028 with Development	PM	ONE HOUR	16:45	18:15	15	✓
D7	Sensitivity Test (2028 With Development)	AM	ONE HOUR	07:45	09:15	15	✓
D8	Sensitivity Test (2028 With Development)	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

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

Flows - 2019 Survey, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	1 - Bradford-Leafy Junction	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms A and B have 86% of the total flow for the roundabout for one or more time segments]
Warning	Mini-roundabout	2 - Bradford-Westwells Junction	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms A and C have 83% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	1 - Bradford-Leafy Junction - A - Linked Arm	Linked arm is using backward compatibility exit restriction mode. See User Guide for details.
Warning	Linked Roundabout	2 - Bradford-Westwells Junction - C - Linked Arm	Linked arm is using backward compatibility exit restriction mode. See User Guide for details.
Warning	Vehicle Mix	1 - Bradford-Leafy Junction	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	2 - Bradford-Westwells Junction	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Bradford-Leafy Junction	Mini-roundabout		A, B, C	9.14	A
2	Bradford-Westwells Junction	Mini-roundabout		A, B, C	6.67	A

Junction Network Options

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	Normal/unknown		29	1 - Bradford-Leafy Junction - C - Leafy Lane

Arms

Arms

Junction	Arm	Name	Description
1 - Bradford-Leafy Junction	A	Linked Arm	
	B	Bradford Road (S)	
	C	Leafy Lane	
2 - Bradford-Westwells Junction	A	Bradford Road (N)	
	B	Westwells Road	
	C	Linked Arm	

Mini Roundabout Geometry

Junction	Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
1 - Bradford-Leafy Junction	A - Linked Arm	6.00	6.00	6.00	0.0	15.00	14.50	0.0	✓
	B - Bradford Road (S)	3.00	3.00	5.00	6.2	11.00	8.60	0.0	✓
	C - Leafy Lane	2.90	2.90	3.80	1.6	13.20	8.30	0.0	
2 - Bradford-Westwells Junction	A - Bradford Road (N)	3.70	3.70	6.20	10.3	11.30	9.60	0.0	✓
	B - Westwells Road	3.00	3.00	6.20	6.3	13.30	8.10	0.0	
	C - Linked Arm	6.60	6.60	6.60	0.0	13.20	11.30	0.0	✓

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
1 - Bradford-Leafy Junction	A - Linked Arm	0.612	1275
	B - Bradford Road (S)	0.517	989
	C - Leafy Lane	0.599	808
2 - Bradford-Westwells Junction	A - Bradford Road (N)	0.561	1161
	B - Westwells Road	0.637	1034
	C - Linked Arm	0.620	1320

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2019 Survey	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)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bradford-Leafy Junction	A - Linked Arm		ONE HOUR	✓	506	100.000
	B - Bradford Road (S)		ONE HOUR	✓	557	100.000
	C - Leafy Lane		ONE HOUR	✓	171	100.000
2 - Bradford-Westwells Junction	A - Bradford Road (N)		ONE HOUR	✓	389	100.000
	B - Westwells Road		ONE HOUR	✓	215	100.000
	C - Linked Arm		ONE HOUR	✓	695	100.000

Origin-Destination Data

Demand (PCU/hr)

1 - Bradford-Leafy Junction

		To		
		A - Linked Arm	B - Bradford Road (S)	C - Leafy Lane
From	A - Linked Arm	0	402	104
	B - Bradford Road (S)	546	0	11
	C - Leafy Lane	149	22	0

Demand (PCU/hr)

2 - Bradford-Westwells Junction

		To		
		A - Bradford Road (N)	B - Westwells Road	C - Linked Arm
From	A - Bradford Road (N)	0	73	316
	B - Westwells Road	25	0	190
	C - Linked Arm	358	337	0

Vehicle Mix

1 - Bradford-Leafy Junction

Heavy Vehicle Percentages

		To		
		A - Linked Arm	B - Bradford Road (S)	C - Leafy Lane
From	A - Linked Arm	0	0	0
	B - Bradford Road (S)	0	0	0
	C - Leafy Lane	0	0	0

2 - Bradford-Westwells Junction

Heavy Vehicle Percentages

		To		
		A - Bradford Road (N)	B - Westwells Road	C - Linked Arm
From	A - Bradford Road (N)	0	0	0
	B - Westwells Road	0	0	0
	C - Linked Arm	0	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bradford-Leafy Junction	A - Linked Arm	0.44	5.12	0.8	A	464	696
	B - Bradford Road (S)	0.66	11.35	1.9	B	511	767
	C - Leafy Lane	0.42	13.87	0.7	B	157	235
2 - Bradford-Westwells Junction	A - Bradford Road (N)	0.45	6.86	0.8	A	357	535
	B - Westwells Road	0.29	6.25	0.4	A	197	296
	C - Linked Arm	0.59	6.69	1.4	A	638	957

Main Results for each time segment

07:45 - 08:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	U
1 - Bradford-Leafy Junction	A - Linked Arm	381	95	16	1265	0.301	379	519	0.0	0.4	4.057	
	B - Bradford Road (S)	419	105	78	949	0.442	416	318	0.0	0.8	6.718	
	C - Leafy Lane	129	32	408	563	0.229	128	86	0.0	0.3	8.238	
2 - Bradford-Westwells Junction	A - Bradford Road (N)	293	73	252	1020	0.287	291	287	0.0	0.4	4.931	
	B - Westwells Road	162	40	237	883	0.183	161	307	0.0	0.2	4.977	
	C - Linked Arm	523	131	19	1309	0.400	521	379	0.0	0.7	4.553	

08:00 - 08:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	U
1 - Bradford-Leafy Junction	A - Linked Arm	455	114	20	1263	0.360	454	623	0.4	0.6	4.448	
	B - Bradford Road (S)	501	125	93	941	0.532	499	381	0.8	1.1	8.126	
	C - Leafy Lane	154	38	490	515	0.299	153	103	0.3	0.4	9.949	
2 - Bradford-Westwells Junction	A - Bradford Road (N)	350	87	302	992	0.353	349	344	0.4	0.5	5.599	
	B - Westwells Road	193	48	284	853	0.227	193	368	0.2	0.3	5.449	
	C - Linked Arm	625	156	22	1307	0.478	624	454	0.7	0.9	5.265	

08:15 - 08:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	557	139	24	1260	0.442	556	761	0.6	0.8	5.106
	B - Bradford Road (S)	613	153	114	930	0.659	610	466	1.1	1.9	11.145
	C - Leafy Lane	188	47	598	449	0.419	187	126	0.4	0.7	13.666
2 - Bradford-Westwells Junction	A - Bradford Road (N)	428	107	370	954	0.449	427	421	0.5	0.8	6.824
	B - Westwells Road	237	59	347	813	0.291	236	450	0.3	0.4	6.237
	C - Linked Arm	765	191	27	1303	0.587	763	556	0.9	1.4	6.640

08:30 - 08:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	557	139	24	1260	0.442	557	765	0.8	0.8	5.118
	B - Bradford Road (S)	613	153	115	930	0.659	613	467	1.9	1.9	11.346
	C - Leafy Lane	188	47	601	448	0.421	188	127	0.7	0.7	13.867
2 - Bradford-Westwells Junction	A - Bradford Road (N)	428	107	371	953	0.449	428	422	0.8	0.8	6.858
	B - Westwells Road	237	59	348	812	0.291	237	451	0.4	0.4	6.252
	C - Linked Arm	765	191	28	1303	0.587	765	557	1.4	1.4	6.688

08:45 - 09:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	455	114	20	1263	0.360	456	629	0.8	0.6	4.464
	B - Bradford Road (S)	501	125	94	941	0.532	504	382	1.9	1.2	8.291
	C - Leafy Lane	154	38	494	512	0.300	155	104	0.7	0.4	10.110
2 - Bradford-Westwells Junction	A - Bradford Road (N)	350	87	304	991	0.353	351	345	0.8	0.6	5.633
	B - Westwells Road	193	48	285	853	0.227	194	370	0.4	0.3	5.467
	C - Linked Arm	625	156	23	1307	0.478	627	456	1.4	0.9	5.312

09:00 - 09:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	U
1 - Bradford-Leafy Junction	A - Linked Arm	381	95	17	1265	0.301	381	525	0.6	0.4	4.077	
	B - Bradford Road (S)	419	105	78	949	0.442	421	320	1.2	0.8	6.838	
	C - Leafy Lane	129	32	412	561	0.230	129	87	0.4	0.3	8.355	
2 - Bradford-Westwells Junction	A - Bradford Road (N)	293	73	254	1019	0.288	293	289	0.6	0.4	4.967	
	B - Westwells Road	162	40	238	882	0.183	162	309	0.3	0.2	5.003	
	C - Linked Arm	523	131	19	1309	0.400	524	382	0.9	0.7	4.594	

Flows - 2019 Survey, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	1 - Bradford-Leafy Junction	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms A and B have 87% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	1 - Bradford-Leafy Junction - A - Linked Arm	Linked arm is using backward compatibility exit restriction mode. See User Guide for details.
Warning	Linked Roundabout	2 - Bradford-Westwells Junction - C - Linked Arm	Linked arm is using backward compatibility exit restriction mode. See User Guide for details.
Warning	Vehicle Mix	1 - Bradford-Leafy Junction	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	2 - Bradford-Westwells Junction	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Bradford-Leafy Junction	Mini-roundabout		A, B, C	7.68	A
2	Bradford-Westwells Junction	Mini-roundabout		A, B, C	7.36	A

Junction Network Options

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	Normal/unknown		30	2 - Bradford-Westwells Junction - B - Westwells Road

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2019 Survey	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)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bradford-Leafy Junction	A - Linked Arm		ONE HOUR	✓	737	100.000
	B - Bradford Road (S)		ONE HOUR	✓	320	100.000
	C - Leafy Lane		ONE HOUR	✓	151	100.000
2 - Bradford-Westwells Junction	A - Bradford Road (N)		ONE HOUR	✓	375	100.000
	B - Westwells Road		ONE HOUR	✓	451	100.000
	C - Linked Arm		ONE HOUR	✓	422	100.000

Origin-Destination Data

Demand (PCU/hr)

1 - Bradford-Leafy Junction

		To		
		A - Linked Arm	B - Bradford Road (S)	C - Leafy Lane
From	A - Linked Arm	0	547	190
	B - Bradford Road (S)	291	0	29
	C - Leafy Lane	131	20	0

Demand (PCU/hr)

2 - Bradford-Westwells Junction

		To		
		A - Bradford Road (N)	B - Westwells Road	C - Linked Arm
From	A - Bradford Road (N)	0	53	322
	B - Westwells Road	36	0	415
	C - Linked Arm	224	198	0

Vehicle Mix

Heavy Vehicle Percentages

1 - Bradford-Leafy Junction

		To		
		A - Linked Arm	B - Bradford Road (S)	C - Leafy Lane
From	A - Linked Arm	0	0	0
	B - Bradford Road (S)	0	0	0
	C - Leafy Lane	0	0	0

Heavy Vehicle Percentages

2 - Bradford-Westwells Junction

		To		
		A - Bradford Road (N)	B - Westwells Road	C - Linked Arm
From	A - Bradford Road (N)	0	0	0
	B - Westwells Road	0	0	0
	C - Linked Arm	0	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bradford-Leafy Junction	A - Linked Arm	0.64	7.99	1.8	A	676	1014
	B - Bradford Road (S)	0.40	6.81	0.7	A	294	440
	C - Leafy Lane	0.27	8.01	0.4	A	139	208
2 - Bradford-Westwells Junction	A - Bradford Road (N)	0.40	5.75	0.7	A	344	516
	B - Westwells Road	0.61	11.54	1.6	B	414	621
	C - Linked Arm	0.36	4.33	0.6	A	387	581

Main Results for each time segment

16:45 - 17:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	U
1 - Bradford-Leafy Junction	A - Linked Arm	555	139	15	1266	0.438	552	316	0.0	0.8	5.020	
	B - Bradford Road (S)	241	60	142	916	0.263	239	424	0.0	0.4	5.313	
	C - Leafy Lane	114	28	218	677	0.168	113	164	0.0	0.2	6.368	
2 - Bradford-Westwells Junction	A - Bradford Road (N)	282	71	148	1078	0.262	281	195	0.0	0.4	4.510	
	B - Westwells Road	340	85	241	880	0.386	337	188	0.0	0.6	6.595	
	C - Linked Arm	318	79	27	1304	0.244	316	551	0.0	0.3	3.641	

17:00 - 17:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	U
1 - Bradford-Leafy Junction	A - Linked Arm	663	166	18	1264	0.524	661	379	0.8	1.1	5.959	
	B - Bradford Road (S)	288	72	170	901	0.319	287	509	0.4	0.5	5.860	
	C - Leafy Lane	136	34	261	651	0.208	136	197	0.2	0.3	6.975	
2 - Bradford-Westwells Junction	A - Bradford Road (N)	337	84	178	1061	0.318	337	233	0.4	0.5	4.963	
	B - Westwells Road	405	101	289	850	0.477	404	225	0.6	0.9	8.060	
	C - Linked Arm	379	95	32	1300	0.292	379	661	0.3	0.4	3.904	

17:15 - 17:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	811	203	22	1262	0.643	809	464	1.1	1.8	7.900
	B - Bradford Road (S)	352	88	208	881	0.400	352	622	0.5	0.7	6.783
	C - Leafy Lane	166	42	320	616	0.270	166	240	0.3	0.4	7.984
2 - Bradford-Westwells Junction	A - Bradford Road (N)	413	103	218	1039	0.397	412	286	0.5	0.7	5.734
	B - Westwells Road	497	124	354	809	0.614	494	276	0.9	1.5	11.347
	C - Linked Arm	465	116	39	1296	0.359	464	808	0.4	0.6	4.324

17:30 - 17:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	811	203	22	1262	0.643	811	465	1.8	1.8	7.991
	B - Bradford Road (S)	352	88	209	881	0.400	352	624	0.7	0.7	6.807
	C - Leafy Lane	166	42	320	616	0.270	166	241	0.4	0.4	8.006
2 - Bradford-Westwells Junction	A - Bradford Road (N)	413	103	218	1039	0.397	413	286	0.7	0.7	5.749
	B - Westwells Road	497	124	355	808	0.614	496	276	1.5	1.6	11.538
	C - Linked Arm	465	116	40	1296	0.359	465	811	0.6	0.6	4.330

17:45 - 18:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	U
1 - Bradford-Leafy Junction	A - Linked Arm	663	166	18	1264	0.524	665	380	1.8	1.1	6.039	
	B - Bradford Road (S)	288	72	171	901	0.319	288	512	0.7	0.5	5.889	
	C - Leafy Lane	136	34	262	651	0.209	136	198	0.4	0.3	7.003	
2 - Bradford-Westwells Junction	A - Bradford Road (N)	337	84	178	1061	0.318	338	234	0.7	0.5	4.983	
	B - Westwells Road	405	101	290	849	0.477	408	226	1.6	0.9	8.207	
	C - Linked Arm	379	95	33	1300	0.292	380	666	0.6	0.4	3.915	

18:00 - 18:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	U
1 - Bradford-Leafy Junction	A - Linked Arm	555	139	15	1266	0.438	556	318	1.1	0.8	5.081	
	B - Bradford Road (S)	241	60	143	915	0.263	241	428	0.5	0.4	5.345	
	C - Leafy Lane	114	28	219	676	0.168	114	165	0.3	0.2	6.402	
2 - Bradford-Westwells Junction	A - Bradford Road (N)	282	71	149	1078	0.262	283	196	0.5	0.4	4.531	
	B - Westwells Road	340	85	243	879	0.386	341	189	0.9	0.6	6.699	
	C - Linked Arm	318	79	27	1304	0.244	318	556	0.4	0.3	3.656	

Flows - 2028 Baseline, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	1 - Bradford-Leafy Junction	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms A and B have 85% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	1 - Bradford-Leafy Junction - A - Linked Arm	Linked arm is using backward compatibility exit restriction mode. See User Guide for details.
Warning	Linked Roundabout	2 - Bradford-Westwells Junction - C - Linked Arm	Linked arm is using backward compatibility exit restriction mode. See User Guide for details.
Warning	Vehicle Mix	1 - Bradford-Leafy Junction	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	2 - Bradford-Westwells Junction	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Bradford-Leafy Junction	Mini-roundabout		A, B, C	13.35	B
2	Bradford-Westwells Junction	Mini-roundabout		A, B, C	8.70	A

Junction Network Options

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	Normal/unknown		10	1 - Bradford-Leafy Junction - C - Leafy Lane

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2028 Baseline	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)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bradford-Leafy Junction	A - Linked Arm		ONE HOUR	✓	625	100.000
	B - Bradford Road (S)		ONE HOUR	✓	629	100.000
	C - Leafy Lane		ONE HOUR	✓	215	100.000
2 - Bradford-Westwells Junction	A - Bradford Road (N)		ONE HOUR	✓	454	100.000
	B - Westwells Road		ONE HOUR	✓	306	100.000
	C - Linked Arm		ONE HOUR	✓	808	100.000

Origin-Destination Data

Demand (PCU/hr)

1 - Bradford-Leafy Junction

		To		
		A - Linked Arm	B - Bradford Road (S)	C - Leafy Lane
From	A - Linked Arm	0	463	162
	B - Bradford Road (S)	617	0	12
	C - Leafy Lane	191	24	0

Demand (PCU/hr)

2 - Bradford-Westwells Junction

		To		
		A - Bradford Road (N)	B - Westwells Road	C - Linked Arm
From	A - Bradford Road (N)	0	100	354
	B - Westwells Road	35	0	271
	C - Linked Arm	389	419	0

Vehicle Mix

Heavy Vehicle Percentages

1 - Bradford-Leafy Junction

		To		
		A - Linked Arm	B - Bradford Road (S)	C - Leafy Lane
From	A - Linked Arm	0	0	0
	B - Bradford Road (S)	0	0	0
	C - Leafy Lane	0	0	0

Heavy Vehicle Percentages

2 - Bradford-Westwells Junction

		To		
		A - Bradford Road (N)	B - Westwells Road	C - Linked Arm
From	A - Bradford Road (N)	0	0	0
	B - Westwells Road	0	0	0
	C - Linked Arm	0	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bradford-Leafy Junction	A - Linked Arm	0.55	6.31	1.2	A	574	860
	B - Bradford Road (S)	0.77	17.46	3.3	C	577	866
	C - Leafy Lane	0.59	21.81	1.4	C	197	296
2 - Bradford-Westwells Junction	A - Bradford Road (N)	0.55	8.94	1.2	A	417	625
	B - Westwells Road	0.43	8.02	0.7	A	281	421
	C - Linked Arm	0.69	8.83	2.2	A	741	1112

Main Results for each time segment

07:45 - 08:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	U
1 - Bradford-Leafy Junction	A - Linked Arm	471	118	18	1264	0.372	468	603	0.0	0.6	4.510	
	B - Bradford Road (S)	474	118	121	927	0.511	469	365	0.0	1.0	7.808	
	C - Leafy Lane	162	40	460	532	0.304	160	130	0.0	0.4	9.639	
2 - Bradford-Westwells Junction	A - Bradford Road (N)	342	85	314	985	0.347	340	317	0.0	0.5	5.558	
	B - Westwells Road	230	58	265	865	0.266	229	388	0.0	0.4	5.645	
	C - Linked Arm	608	152	26	1304	0.466	605	468	0.0	0.9	5.123	

08:00 - 08:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	562	140	21	1262	0.445	561	723	0.6	0.8	5.129
	B - Bradford Road (S)	565	141	145	914	0.619	563	437	1.0	1.6	10.193
	C - Leafy Lane	193	48	553	477	0.405	192	156	0.4	0.7	12.613
2 - Bradford-Westwells Junction	A - Bradford Road (N)	408	102	376	950	0.429	407	380	0.5	0.7	6.617
	B - Westwells Road	275	69	318	832	0.331	275	466	0.4	0.5	6.456
	C - Linked Arm	726	182	31	1301	0.558	725	561	0.9	1.2	6.232

08:15 - 08:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	688	172	26	1259	0.547	687	881	0.8	1.2	6.269
	B - Bradford Road (S)	693	173	178	897	0.772	686	535	1.6	3.1	16.577
	C - Leafy Lane	237	59	673	404	0.585	234	191	0.7	1.3	20.796
2 - Bradford-Westwells Junction	A - Bradford Road (N)	500	125	460	904	0.553	498	465	0.7	1.2	8.836
	B - Westwells Road	337	84	388	787	0.428	336	569	0.5	0.7	7.970
	C - Linked Arm	890	222	38	1297	0.686	886	686	1.2	2.1	8.693

08:30 - 08:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	688	172	26	1259	0.547	688	889	1.2	1.2	6.305
	B - Bradford Road (S)	693	173	178	897	0.772	692	536	3.1	3.3	17.458
	C - Leafy Lane	237	59	679	401	0.590	236	192	1.3	1.4	21.811
2 - Bradford-Westwells Junction	A - Bradford Road (N)	500	125	461	903	0.554	500	467	1.2	1.2	8.936
	B - Westwells Road	337	84	390	786	0.429	337	571	0.7	0.7	8.018
	C - Linked Arm	890	222	39	1297	0.686	890	688	2.1	2.2	8.834

08:45 - 09:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	562	140	22	1262	0.445	563	735	1.2	0.8	5.168
	B - Bradford Road (S)	565	141	146	914	0.619	572	439	3.3	1.7	10.713
	C - Leafy Lane	193	48	561	472	0.410	196	157	1.4	0.7	13.181
2 - Bradford-Westwells Junction	A - Bradford Road (N)	408	102	378	949	0.430	410	383	1.2	0.8	6.703
	B - Westwells Road	275	69	320	830	0.331	276	469	0.7	0.5	6.507
	C - Linked Arm	726	182	32	1301	0.558	730	564	2.2	1.3	6.343

09:00 - 09:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	U
1 - Bradford-Leafy Junction	A - Linked Arm	471	118	18	1264	0.372	471	612	0.8	0.6	4.546	
	B - Bradford Road (S)	474	118	122	926	0.511	476	367	1.7	1.1	8.041	
	C - Leafy Lane	162	40	467	528	0.307	163	131	0.7	0.4	9.885	
2 - Bradford-Westwells Junction	A - Bradford Road (N)	342	85	316	984	0.347	343	320	0.8	0.5	5.624	
	B - Westwells Road	230	58	267	864	0.267	231	392	0.5	0.4	5.694	
	C - Linked Arm	608	152	26	1304	0.466	610	472	1.3	0.9	5.197	

Flows - 2028 Baseline, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	1 - Bradford-Leafy Junction	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms A and B have 85% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	1 - Bradford-Leafy Junction - A - Linked Arm	Linked arm is using backward compatibility exit restriction mode. See User Guide for details.
Warning	Linked Roundabout	2 - Bradford-Westwells Junction - C - Linked Arm	Linked arm is using backward compatibility exit restriction mode. See User Guide for details.
Warning	Vehicle Mix	1 - Bradford-Leafy Junction	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	2 - Bradford-Westwells Junction	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Bradford-Leafy Junction	Mini-roundabout		A, B, C	10.42	B
2	Bradford-Westwells Junction	Mini-roundabout		A, B, C	11.84	B

Junction Network Options

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	Normal/unknown		8	2 - Bradford-Westwells Junction - B - Westwells Road

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2028 Baseline	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)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bradford-Leafy Junction	A - Linked Arm		ONE HOUR	✓	862	100.000
	B - Bradford Road (S)		ONE HOUR	✓	370	100.000
	C - Leafy Lane		ONE HOUR	✓	203	100.000
2 - Bradford-Westwells Junction	A - Bradford Road (N)		ONE HOUR	✓	419	100.000
	B - Westwells Road		ONE HOUR	✓	566	100.000
	C - Linked Arm		ONE HOUR	✓	520	100.000

Origin-Destination Data

Demand (PCU/hr)

1 - Bradford-Leafy Junction

		To		
		A - Linked Arm	B - Bradford Road (S)	C - Leafy Lane
From	A - Linked Arm	0	622	240
	B - Bradford Road (S)	339	0	31
	C - Leafy Lane	181	22	0

Demand (PCU/hr)

2 - Bradford-Westwells Junction

		To		
		A - Bradford Road (N)	B - Westwells Road	C - Linked Arm
From	A - Bradford Road (N)	0	65	354
	B - Westwells Road	58	0	508
	C - Linked Arm	251	269	0

Vehicle Mix

Heavy Vehicle Percentages

1 - Bradford-Leafy Junction

		To		
		A - Linked Arm	B - Bradford Road (S)	C - Leafy Lane
From	A - Linked Arm	0	0	0
	B - Bradford Road (S)	0	0	0
	C - Leafy Lane	0	0	0

Heavy Vehicle Percentages

2 - Bradford-Westwells Junction

		To		
		A - Bradford Road (N)	B - Westwells Road	C - Linked Arm
From	A - Bradford Road (N)	0	0	0
	B - Westwells Road	0	0	0
	C - Linked Arm	0	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bradford-Leafy Junction	A - Linked Arm	0.75	11.53	3.0	B	791	1186
	B - Bradford Road (S)	0.48	8.08	0.9	A	340	509
	C - Leafy Lane	0.38	9.98	0.6	A	186	279
2 - Bradford-Westwells Junction	A - Bradford Road (N)	0.46	6.74	0.9	A	384	577
	B - Westwells Road	0.79	21.82	3.6	C	519	779
	C - Linked Arm	0.45	5.08	0.8	A	477	716

Main Results for each time segment

16:45 - 17:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	U
1 - Bradford-Leafy Junction	A - Linked Arm	649	162	16	1265	0.513	645	389	0.0	1.0	5.767	
	B - Bradford Road (S)	279	70	180	896	0.311	277	482	0.0	0.4	5.793	
	C - Leafy Lane	153	38	254	656	0.233	152	203	0.0	0.3	7.121	
2 - Bradford-Westwells Junction	A - Bradford Road (N)	315	79	202	1048	0.301	314	231	0.0	0.4	4.891	
	B - Westwells Road	426	107	265	865	0.493	422	250	0.0	1.0	8.063	
	C - Linked Arm	391	98	43	1294	0.303	390	644	0.0	0.4	3.976	

17:00 - 17:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	775	194	20	1263	0.614	773	467	1.0	1.6	7.313
	B - Bradford Road (S)	333	83	215	878	0.379	332	577	0.4	0.6	6.588
	C - Leafy Lane	182	46	304	626	0.292	182	243	0.3	0.4	8.107
2 - Bradford-Westwells Junction	A - Bradford Road (N)	377	94	242	1026	0.367	376	277	0.4	0.6	5.537
	B - Westwells Road	509	127	318	832	0.612	507	300	1.0	1.5	10.993
	C - Linked Arm	467	117	52	1288	0.363	467	772	0.4	0.6	4.380

17:15 - 17:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	949	237	24	1260	0.753	944	571	1.6	2.9	11.175
	B - Bradford Road (S)	407	102	263	853	0.477	406	705	0.6	0.9	8.028
	C - Leafy Lane	224	56	372	585	0.382	223	297	0.4	0.6	9.917
2 - Bradford-Westwells Junction	A - Bradford Road (N)	461	115	296	995	0.463	460	339	0.6	0.9	6.713
	B - Westwells Road	623	156	389	786	0.793	615	367	1.5	3.5	20.202
	C - Linked Arm	573	143	63	1281	0.447	572	941	0.6	0.8	5.066

17:30 - 17:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	949	237	24	1260	0.753	949	572	2.9	3.0	11.530
	B - Bradford Road (S)	407	102	264	853	0.478	407	709	0.9	0.9	8.082
	C - Leafy Lane	224	56	373	584	0.383	223	298	0.6	0.6	9.977
2 - Bradford-Westwells Junction	A - Bradford Road (N)	461	115	296	995	0.464	461	340	0.9	0.9	6.743
	B - Westwells Road	623	156	390	786	0.793	622	368	3.5	3.6	21.819
	C - Linked Arm	573	143	64	1281	0.447	573	948	0.8	0.8	5.081

17:45 - 18:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	775	194	20	1263	0.614	780	469	3.0	1.6	7.542
	B - Bradford Road (S)	333	83	217	877	0.379	334	583	0.9	0.6	6.641
	C - Leafy Lane	182	46	306	625	0.292	183	245	0.6	0.4	8.170
2 - Bradford-Westwells Junction	A - Bradford Road (N)	377	94	242	1025	0.367	378	279	0.9	0.6	5.568
	B - Westwells Road	509	127	319	831	0.613	517	301	3.6	1.6	11.745
	C - Linked Arm	467	117	53	1288	0.363	468	783	0.8	0.6	4.400

18:00 - 18:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	U
1 - Bradford-Leafy Junction	A - Linked Arm	649	162	17	1265	0.513	651	392	1.6	1.1	5.885	
	B - Bradford Road (S)	279	70	181	896	0.311	279	486	0.6	0.5	5.848	
	C - Leafy Lane	153	38	256	655	0.233	153	205	0.4	0.3	7.186	
2 - Bradford-Westwells Junction	A - Bradford Road (N)	315	79	203	1047	0.301	316	233	0.6	0.4	4.925	
	B - Westwells Road	426	107	267	864	0.493	429	252	1.6	1.0	8.320	
	C - Linked Arm	391	98	44	1293	0.303	392	652	0.6	0.4	3.996	

Flows - 2028 with Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	1 - Bradford-Leafy Junction	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms A and B have 85% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	1 - Bradford-Leafy Junction - A - Linked Arm	Linked arm is using backward compatibility exit restriction mode. See User Guide for details.
Warning	Linked Roundabout	2 - Bradford-Westwells Junction - C - Linked Arm	Linked arm is using backward compatibility exit restriction mode. See User Guide for details.
Warning	Vehicle Mix	1 - Bradford-Leafy Junction	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	2 - Bradford-Westwells Junction	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Bradford-Leafy Junction	Mini-roundabout		A, B, C	14.41	B
2	Bradford-Westwells Junction	Mini-roundabout		A, B, C	9.23	A

Junction Network Options

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	Normal/unknown		7	1 - Bradford-Leafy Junction - C - Leafy Lane

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	2028 with Development	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bradford-Leafy Junction	A - Linked Arm		ONE HOUR	✓	631	100.000
	B - Bradford Road (S)		ONE HOUR	✓	644	100.000
	C - Leafy Lane		ONE HOUR	✓	220	100.000
2 - Bradford-Westwells Junction	A - Bradford Road (N)		ONE HOUR	✓	468	100.000
	B - Westwells Road		ONE HOUR	✓	316	100.000
	C - Linked Arm		ONE HOUR	✓	828	100.000

Origin-Destination Data

1 - Bradford-Leafy Junction

Demand (PCU/hr)

		To		
		A - Linked Arm	B - Bradford Road (S)	C - Leafy Lane
From	A - Linked Arm	0	468	163
	B - Bradford Road (S)	632	0	12
	C - Leafy Lane	196	24	0

2 - Bradford-Westwells Junction

Demand (PCU/hr)

		To		
		A - Bradford Road (N)	B - Westwells Road	C - Linked Arm
From	A - Bradford Road (N)	0	114	354
	B - Westwells Road	39	0	277
	C - Linked Arm	389	439	0

Vehicle Mix

1 - Bradford-Leafy Junction

Heavy Vehicle Percentages

		To		
		A - Linked Arm	B - Bradford Road (S)	C - Leafy Lane
From	A - Linked Arm	0	0	0
	B - Bradford Road (S)	0	0	0
	C - Leafy Lane	0	0	0

2 - Bradford-Westwells Junction

Heavy Vehicle Percentages

		To		
		A - Bradford Road (N)	B - Westwells Road	C - Linked Arm
From	A - Bradford Road (N)	0	0	0
	B - Westwells Road	0	0	0
	C - Linked Arm	0	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bradford-Leafy Junction	A - Linked Arm	0.55	6.38	1.2	A	579	869
	B - Bradford Road (S)	0.79	18.99	3.6	C	591	886
	C - Leafy Lane	0.62	24.01	1.6	C	202	303
2 - Bradford-Westwells Junction	A - Bradford Road (N)	0.58	9.60	1.4	A	429	644
	B - Westwells Road	0.44	8.22	0.8	A	290	435
	C - Linked Arm	0.70	9.41	2.3	A	760	1140

Main Results for each time segment

07:45 - 08:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	U
1 - Bradford-Leafy Junction	A - Linked Arm	475	119	18	1264	0.376	473	618	0.0	0.6	4.534	
	B - Bradford Road (S)	485	121	122	926	0.523	481	368	0.0	1.1	8.003	
	C - Leafy Lane	166	41	472	525	0.315	164	131	0.0	0.5	9.911	
2 - Bradford-Westwells Junction	A - Bradford Road (N)	352	88	329	977	0.361	350	320	0.0	0.6	5.721	
	B - Westwells Road	238	59	265	865	0.275	236	414	0.0	0.4	5.710	
	C - Linked Arm	623	156	29	1302	0.479	620	472	0.0	0.9	5.247	

08:00 - 08:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	567	142	21	1262	0.449	566	741	0.6	0.8	5.169
	B - Bradford Road (S)	579	145	146	914	0.634	577	442	1.1	1.7	10.601
	C - Leafy Lane	198	49	566	469	0.422	197	157	0.5	0.7	13.179
2 - Bradford-Westwells Junction	A - Bradford Road (N)	421	105	394	940	0.447	420	384	0.6	0.8	6.902
	B - Westwells Road	284	71	318	832	0.342	284	496	0.4	0.5	6.559
	C - Linked Arm	744	186	35	1299	0.573	743	566	0.9	1.3	6.454

08:15 - 08:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	695	174	26	1259	0.552	693	902	0.8	1.2	6.342
	B - Bradford Road (S)	709	177	179	897	0.791	702	540	1.7	3.5	17.842
	C - Leafy Lane	242	61	689	395	0.613	239	192	0.7	1.5	22.636
2 - Bradford-Westwells Junction	A - Bradford Road (N)	515	129	481	891	0.578	513	469	0.8	1.3	9.464
	B - Westwells Road	348	87	388	787	0.442	347	606	0.5	0.8	8.163
	C - Linked Arm	912	228	43	1294	0.705	908	692	1.3	2.3	9.225

08:30 - 08:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	695	174	26	1259	0.552	695	911	1.2	1.2	6.379
	B - Bradford Road (S)	709	177	179	896	0.791	708	542	3.5	3.6	18.991
	C - Leafy Lane	242	61	695	391	0.619	242	193	1.5	1.6	24.008
2 - Bradford-Westwells Junction	A - Bradford Road (N)	515	129	483	890	0.579	515	471	1.3	1.4	9.595
	B - Westwells Road	348	87	390	786	0.443	348	609	0.8	0.8	8.220
	C - Linked Arm	912	228	43	1294	0.705	911	695	2.3	2.3	9.405

08:45 - 09:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	567	142	22	1262	0.450	569	754	1.2	0.8	5.209
	B - Bradford Road (S)	579	145	147	913	0.634	586	444	3.6	1.8	11.240
	C - Leafy Lane	198	49	575	463	0.427	201	158	1.6	0.8	13.894
2 - Bradford-Westwells Junction	A - Bradford Road (N)	421	105	397	939	0.448	423	387	1.4	0.8	7.008
	B - Westwells Road	284	71	320	830	0.342	285	500	0.8	0.5	6.615
	C - Linked Arm	744	186	35	1299	0.573	748	570	2.3	1.4	6.585

09:00 - 09:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	475	119	18	1264	0.376	476	627	0.8	0.6	4.574
	B - Bradford Road (S)	485	121	123	926	0.524	487	371	1.8	1.1	8.263
	C - Leafy Lane	166	41	478	521	0.318	167	132	0.8	0.5	10.190
2 - Bradford-Westwells Junction	A - Bradford Road (N)	352	88	331	975	0.361	353	323	0.8	0.6	5.796
	B - Westwells Road	238	59	267	864	0.275	238	417	0.5	0.4	5.762
	C - Linked Arm	623	156	29	1302	0.479	625	476	1.4	0.9	5.331

Flows - 2028 with Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	1 - Bradford-Leafy Junction	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms A and B have 85% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	1 - Bradford-Leafy Junction - A - Linked Arm	Linked arm is using backward compatibility exit restriction mode. See User Guide for details.
Warning	Linked Roundabout	2 - Bradford-Westwells Junction - C - Linked Arm	Linked arm is using backward compatibility exit restriction mode. See User Guide for details.
Warning	Vehicle Mix	1 - Bradford-Leafy Junction	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	2 - Bradford-Westwells Junction	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Bradford-Leafy Junction	Mini-roundabout		A, B, C	10.87	B
2	Bradford-Westwells Junction	Mini-roundabout		A, B, C	13.86	B

Junction Network Options

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	Normal/unknown		4	2 - Bradford-Westwells Junction - B - Westwells Road

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	2028 with Development	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bradford-Leafy Junction	A - Linked Arm		ONE HOUR	✓	878	100.000
	B - Bradford Road (S)		ONE HOUR	✓	372	100.000
	C - Leafy Lane		ONE HOUR	✓	204	100.000
2 - Bradford-Westwells Junction	A - Bradford Road (N)		ONE HOUR	✓	421	100.000
	B - Westwells Road		ONE HOUR	✓	594	100.000
	C - Linked Arm		ONE HOUR	✓	522	100.000

Origin-Destination Data

Demand (PCU/hr)

1 - Bradford-Leafy Junction

		To		
		A - Linked Arm	B - Bradford Road (S)	C - Leafy Lane
From	A - Linked Arm	0	634	244
	B - Bradford Road (S)	341	0	31
	C - Leafy Lane	182	22	0

Demand (PCU/hr)

2 - Bradford-Westwells Junction

		To		
		A - Bradford Road (N)	B - Westwells Road	C - Linked Arm
From	A - Bradford Road (N)	0	67	354
	B - Westwells Road	70	0	524
	C - Linked Arm	251	271	0

Vehicle Mix

Heavy Vehicle Percentages

1 - Bradford-Leafy Junction

		To		
		A - Linked Arm	B - Bradford Road (S)	C - Leafy Lane
From	A - Linked Arm	0	0	0
	B - Bradford Road (S)	0	0	0
	C - Leafy Lane	0	0	0

Heavy Vehicle Percentages

2 - Bradford-Westwells Junction

		To		
		A - Bradford Road (N)	B - Westwells Road	C - Linked Arm
From	A - Bradford Road (N)	0	0	0
	B - Westwells Road	0	0	0
	C - Linked Arm	0	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bradford-Leafy Junction	A - Linked Arm	0.77	12.21	3.2	B	806	1209
	B - Bradford Road (S)	0.48	8.16	0.9	A	341	512
	C - Leafy Lane	0.39	10.04	0.6	B	187	281
2 - Bradford-Westwells Junction	A - Bradford Road (N)	0.47	6.79	0.9	A	386	579
	B - Westwells Road	0.83	26.52	4.6	D	545	818
	C - Linked Arm	0.45	5.16	0.8	A	479	718

Main Results for each time segment

16:45 - 17:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	U
1 - Bradford-Leafy Junction	A - Linked Arm	661	165	16	1265	0.523	657	391	0.0	1.1	5.877	
	B - Bradford Road (S)	280	70	182	895	0.313	278	491	0.0	0.5	5.822	
	C - Leafy Lane	154	38	255	655	0.234	152	206	0.0	0.3	7.144	
2 - Bradford-Westwells Junction	A - Bradford Road (N)	317	79	203	1047	0.303	315	240	0.0	0.4	4.907	
	B - Westwells Road	447	112	265	865	0.517	443	253	0.0	1.0	8.447	
	C - Linked Arm	393	98	52	1288	0.305	391	656	0.0	0.4	4.007	

17:00 - 17:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	789	197	20	1263	0.625	787	469	1.1	1.6	7.526
	B - Bradford Road (S)	334	84	219	876	0.382	334	588	0.5	0.6	6.628
	C - Leafy Lane	183	46	306	625	0.294	183	247	0.3	0.4	8.144
2 - Bradford-Westwells Junction	A - Bradford Road (N)	378	95	243	1025	0.369	378	288	0.4	0.6	5.561
	B - Westwells Road	534	133	318	832	0.642	531	303	1.0	1.7	11.875
	C - Linked Arm	469	117	63	1282	0.366	469	786	0.4	0.6	4.425

17:15 - 17:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	967	242	24	1260	0.767	961	574	1.6	3.1	11.779
	B - Bradford Road (S)	410	102	267	851	0.481	408	718	0.6	0.9	8.106
	C - Leafy Lane	225	56	374	584	0.385	224	301	0.4	0.6	9.983
2 - Bradford-Westwells Junction	A - Bradford Road (N)	464	116	298	994	0.466	462	352	0.6	0.9	6.757
	B - Westwells Road	654	164	389	786	0.832	644	371	1.7	4.3	23.705
	C - Linked Arm	575	144	76	1273	0.451	574	957	0.6	0.8	5.137

17:30 - 17:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	967	242	24	1260	0.767	966	576	3.1	3.2	12.210
	B - Bradford Road (S)	410	102	269	850	0.482	410	722	0.9	0.9	8.164
	C - Leafy Lane	225	56	375	583	0.385	225	303	0.6	0.6	10.044
2 - Bradford-Westwells Junction	A - Bradford Road (N)	464	116	298	994	0.466	464	353	0.9	0.9	6.787
	B - Westwells Road	654	164	390	786	0.832	653	372	4.3	4.6	26.523
	C - Linked Arm	575	144	77	1273	0.452	575	966	0.8	0.8	5.156

17:45 - 18:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	789	197	20	1263	0.625	795	472	3.2	1.7	7.794
	B - Bradford Road (S)	334	84	221	875	0.382	336	594	0.9	0.6	6.690
	C - Leafy Lane	183	46	308	624	0.294	184	249	0.6	0.4	8.208
2 - Bradford-Westwells Junction	A - Bradford Road (N)	378	95	244	1024	0.369	380	290	0.9	0.6	5.592
	B - Westwells Road	534	133	319	831	0.643	545	305	4.6	1.9	13.036
	C - Linked Arm	469	117	64	1281	0.366	470	800	0.8	0.6	4.448

18:00 - 18:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	U
1 - Bradford-Leafy Junction	A - Linked Arm	661	165	17	1265	0.523	663	395	1.7	1.1	6.007	
	B - Bradford Road (S)	280	70	184	894	0.313	281	496	0.6	0.5	5.876	
	C - Leafy Lane	154	38	257	654	0.235	154	208	0.4	0.3	7.213	
2 - Bradford-Westwells Junction	A - Bradford Road (N)	317	79	204	1047	0.303	318	242	0.6	0.4	4.941	
	B - Westwells Road	447	112	267	864	0.518	450	255	1.9	1.1	8.768	
	C - Linked Arm	393	98	53	1288	0.305	394	664	0.6	0.4	4.029	

Flows - Sensitivity Test (2028 With Development), AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	1 - Bradford-Leafy Junction	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms A and B have 85% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	1 - Bradford-Leafy Junction - A - Linked Arm	Linked arm is using backward compatibility exit restriction mode. See User Guide for details.
Warning	Linked Roundabout	2 - Bradford-Westwells Junction - C - Linked Arm	Linked arm is using backward compatibility exit restriction mode. See User Guide for details.
Warning	Vehicle Mix	1 - Bradford-Leafy Junction	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	2 - Bradford-Westwells Junction	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Bradford-Leafy Junction	Mini-roundabout		A, B, C	14.74	B
2	Bradford-Westwells Junction	Mini-roundabout		A, B, C	9.35	A

Junction Network Options

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	Normal/unknown		7	1 - Bradford-Leafy Junction - C - Leafy Lane

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	Sensitivity Test (2028 With Development)	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bradford-Leafy Junction	A - Linked Arm		ONE HOUR	✓	629	100.000
	B - Bradford Road (S)		ONE HOUR	✓	648	100.000
	C - Leafy Lane		ONE HOUR	✓	222	100.000
2 - Bradford-Westwells Junction	A - Bradford Road (N)		ONE HOUR	✓	473	100.000
	B - Westwells Road		ONE HOUR	✓	312	100.000
	C - Linked Arm		ONE HOUR	✓	834	100.000

Origin-Destination Data

Demand (PCU/hr)

1 - Bradford-Leafy Junction

		To		
		A - Linked Arm	B - Bradford Road (S)	C - Leafy Lane
From	A - Linked Arm	0	466	163
	B - Bradford Road (S)	636	0	12
	C - Leafy Lane	198	24	0

Demand (PCU/hr)

2 - Bradford-Westwells Junction

		To		
		A - Bradford Road (N)	B - Westwells Road	C - Linked Arm
From	A - Bradford Road (N)	0	119	354
	B - Westwells Road	37	0	275
	C - Linked Arm	389	445	0

Vehicle Mix

Heavy Vehicle Percentages

1 - Bradford-Leafy Junction

		To		
		A - Linked Arm	B - Bradford Road (S)	C - Leafy Lane
From	A - Linked Arm	0	0	0
	B - Bradford Road (S)	0	0	0
	C - Leafy Lane	0	0	0

Heavy Vehicle Percentages

2 - Bradford-Westwells Junction

		To		
		A - Bradford Road (N)	B - Westwells Road	C - Linked Arm
From	A - Bradford Road (N)	0	0	0
	B - Westwells Road	0	0	0
	C - Linked Arm	0	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bradford-Leafy Junction	A - Linked Arm	0.55	6.35	1.2	A	577	866
	B - Bradford Road (S)	0.80	19.43	3.7	C	595	892
	C - Leafy Lane	0.63	24.79	1.6	C	204	306
2 - Bradford-Westwells Junction	A - Bradford Road (N)	0.59	9.84	1.4	A	434	651
	B - Westwells Road	0.44	8.14	0.8	A	286	429
	C - Linked Arm	0.71	9.53	2.4	A	765	1148

Main Results for each time segment

07:45 - 08:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	474	118	18	1264	0.375	471	622	0.0	0.6	4.526
	B - Bradford Road (S)	488	122	122	926	0.527	483	367	0.0	1.1	8.055
	C - Leafy Lane	167	42	475	524	0.319	165	131	0.0	0.5	10.000
2 - Bradford-Westwells Junction	A - Bradford Road (N)	356	89	333	974	0.365	354	319	0.0	0.6	5.780
	B - Westwells Road	235	59	265	865	0.271	233	422	0.0	0.4	5.685
	C - Linked Arm	628	157	28	1303	0.482	624	471	0.0	0.9	5.273

08:00 - 08:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	565	141	21	1262	0.448	565	746	0.6	0.8	5.155
	B - Bradford Road (S)	583	146	146	914	0.638	580	440	1.1	1.7	10.710
	C - Leafy Lane	200	50	569	467	0.428	199	157	0.5	0.7	13.367
2 - Bradford-Westwells Junction	A - Bradford Road (N)	425	106	399	937	0.454	424	382	0.6	0.8	7.000
	B - Westwells Road	280	70	317	832	0.337	280	506	0.4	0.5	6.516
	C - Linked Arm	750	187	33	1300	0.577	748	564	0.9	1.3	6.504

08:15 - 08:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	693	173	26	1259	0.550	691	908	0.8	1.2	6.317
	B - Bradford Road (S)	713	178	179	897	0.796	706	538	1.7	3.6	18.194
	C - Leafy Lane	244	61	693	393	0.623	241	192	0.7	1.5	23.279
2 - Bradford-Westwells Junction	A - Bradford Road (N)	521	130	488	888	0.587	519	467	0.8	1.4	9.693
	B - Westwells Road	344	86	388	787	0.437	342	618	0.5	0.8	8.082
	C - Linked Arm	918	230	41	1295	0.709	914	690	1.3	2.4	9.346

08:30 - 08:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	693	173	26	1259	0.550	693	917	1.2	1.2	6.354
	B - Bradford Road (S)	713	178	179	896	0.796	713	539	3.6	3.7	19.429
	C - Leafy Lane	244	61	700	389	0.629	244	193	1.5	1.6	24.791
2 - Bradford-Westwells Junction	A - Bradford Road (N)	521	130	490	886	0.587	521	469	1.4	1.4	9.835
	B - Westwells Road	344	86	390	786	0.437	343	621	0.8	0.8	8.138
	C - Linked Arm	918	230	41	1295	0.709	918	692	2.4	2.4	9.534

08:45 - 09:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	565	141	22	1262	0.448	567	760	1.2	0.8	5.195
	B - Bradford Road (S)	583	146	147	913	0.638	590	442	3.7	1.8	11.384
	C - Leafy Lane	200	50	579	461	0.433	203	158	1.6	0.8	14.134
2 - Bradford-Westwells Junction	A - Bradford Road (N)	425	106	402	936	0.454	427	385	1.4	0.8	7.116
	B - Westwells Road	280	70	320	830	0.338	281	510	0.8	0.5	6.574
	C - Linked Arm	750	187	33	1300	0.577	754	568	2.4	1.4	6.640

09:00 - 09:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	474	118	18	1264	0.375	474	632	0.8	0.6	4.564
	B - Bradford Road (S)	488	122	123	926	0.527	491	370	1.8	1.1	8.325
	C - Leafy Lane	167	42	481	519	0.322	168	132	0.8	0.5	10.290
2 - Bradford-Westwells Junction	A - Bradford Road (N)	356	89	336	973	0.366	357	322	0.8	0.6	5.859
	B - Westwells Road	235	59	267	864	0.272	235	426	0.5	0.4	5.736
	C - Linked Arm	628	157	28	1303	0.482	630	475	1.4	0.9	5.358

Flows - Sensitivity Test (2028 With Development), PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout	1 - Bradford-Leafy Junction	Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms A and B have 85% of the total flow for the roundabout for one or more time segments]
Warning	Linked Roundabout	1 - Bradford-Leafy Junction - A - Linked Arm	Linked arm is using backward compatibility exit restriction mode. See User Guide for details.
Warning	Linked Roundabout	2 - Bradford-Westwells Junction - C - Linked Arm	Linked arm is using backward compatibility exit restriction mode. See User Guide for details.
Warning	Vehicle Mix	1 - Bradford-Leafy Junction	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Vehicle Mix	2 - Bradford-Westwells Junction	HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Bradford-Leafy Junction	Mini-roundabout		A, B, C	10.88	B
2	Bradford-Westwells Junction	Mini-roundabout		A, B, C	13.86	B

Junction Network Options

Driving side	Lighting	Road surface	In London	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	Normal/unknown		4	2 - Bradford-Westwells Junction - B - Westwells Road

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	Sensitivity Test (2028 With Development)	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Bradford-Leafy Junction	A - Linked Arm		ONE HOUR	✓	878	100.000
	B - Bradford Road (S)		ONE HOUR	✓	373	100.000
	C - Leafy Lane		ONE HOUR	✓	204	100.000
2 - Bradford-Westwells Junction	A - Bradford Road (N)		ONE HOUR	✓	422	100.000
	B - Westwells Road		ONE HOUR	✓	594	100.000
	C - Linked Arm		ONE HOUR	✓	524	100.000

Origin-Destination Data

Demand (PCU/hr)

1 - Bradford-Leafy Junction

		To		
		A - Linked Arm	B - Bradford Road (S)	C - Leafy Lane
From	A - Linked Arm	0	634	244
	B - Bradford Road (S)	342	0	31
	C - Leafy Lane	182	22	0

Demand (PCU/hr)

2 - Bradford-Westwells Junction

		To		
		A - Bradford Road (N)	B - Westwells Road	C - Linked Arm
From	A - Bradford Road (N)	0	68	354
	B - Westwells Road	70	0	524
	C - Linked Arm	251	273	0

Vehicle Mix

Heavy Vehicle Percentages

1 - Bradford-Leafy Junction

		To		
		A - Linked Arm	B - Bradford Road (S)	C - Leafy Lane
From	A - Linked Arm	0	0	0
	B - Bradford Road (S)	0	0	0
	C - Leafy Lane	0	0	0

Heavy Vehicle Percentages

2 - Bradford-Westwells Junction

		To		
		A - Bradford Road (N)	B - Westwells Road	C - Linked Arm
From	A - Bradford Road (N)	0	0	0
	B - Westwells Road	0	0	0
	C - Linked Arm	0	0	0

Results

Results Summary for whole modelled period

Junction	Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Bradford-Leafy Junction	A - Linked Arm	0.77	12.21	3.2	B	806	1209
	B - Bradford Road (S)	0.48	8.18	0.9	A	342	513
	C - Leafy Lane	0.39	10.06	0.6	B	187	281
2 - Bradford-Westwells Junction	A - Bradford Road (N)	0.47	6.82	0.9	A	387	581
	B - Westwells Road	0.83	26.52	4.6	D	545	818
	C - Linked Arm	0.45	5.17	0.8	A	481	721

Main Results for each time segment

16:45 - 17:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	U
1 - Bradford-Leafy Junction	A - Linked Arm	661	165	16	1265	0.523	657	392	0.0	1.1	5.877	
	B - Bradford Road (S)	281	70	182	895	0.314	279	491	0.0	0.5	5.829	
	C - Leafy Lane	154	38	256	655	0.235	152	206	0.0	0.3	7.150	
2 - Bradford-Westwells Junction	A - Bradford Road (N)	318	79	205	1046	0.304	316	240	0.0	0.4	4.913	
	B - Westwells Road	447	112	265	865	0.517	443	256	0.0	1.0	8.447	
	C - Linked Arm	394	99	52	1288	0.306	393	656	0.0	0.4	4.014	

17:00 - 17:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	789	197	20	1263	0.625	787	470	1.1	1.6	7.526
	B - Bradford Road (S)	335	84	219	876	0.383	335	588	0.5	0.6	6.639
	C - Leafy Lane	183	46	307	624	0.294	183	247	0.3	0.4	8.154
2 - Bradford-Westwells Junction	A - Bradford Road (N)	379	95	245	1024	0.371	379	288	0.4	0.6	5.577
	B - Westwells Road	534	133	318	832	0.642	531	306	1.0	1.7	11.875
	C - Linked Arm	471	118	63	1282	0.368	471	786	0.4	0.6	4.435

17:15 - 17:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	967	242	24	1260	0.767	961	575	1.6	3.1	11.779
	B - Bradford Road (S)	411	103	267	851	0.482	409	718	0.6	0.9	8.127
	C - Leafy Lane	225	56	375	583	0.385	224	301	0.4	0.6	10.001
2 - Bradford-Westwells Junction	A - Bradford Road (N)	465	116	300	993	0.468	463	352	0.6	0.9	6.784
	B - Westwells Road	654	164	389	786	0.832	644	375	1.7	4.3	23.704
	C - Linked Arm	577	144	76	1273	0.453	576	957	0.6	0.8	5.153

17:30 - 17:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	967	242	24	1260	0.767	966	577	3.1	3.2	12.210
	B - Bradford Road (S)	411	103	269	850	0.483	411	722	0.9	0.9	8.185
	C - Leafy Lane	225	56	377	582	0.386	225	303	0.6	0.6	10.063
2 - Bradford-Westwells Junction	A - Bradford Road (N)	465	116	301	993	0.468	465	353	0.9	0.9	6.817
	B - Westwells Road	654	164	390	786	0.832	653	375	4.3	4.6	26.523
	C - Linked Arm	577	144	77	1273	0.453	577	966	0.8	0.8	5.173

17:45 - 18:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)
1 - Bradford-Leafy Junction	A - Linked Arm	789	197	20	1263	0.625	795	473	3.2	1.7	7.794
	B - Bradford Road (S)	335	84	221	875	0.383	337	594	0.9	0.6	6.699
	C - Leafy Lane	183	46	309	623	0.294	184	249	0.6	0.4	8.220
2 - Bradford-Westwells Junction	A - Bradford Road (N)	379	95	246	1023	0.371	380	290	0.9	0.6	5.609
	B - Westwells Road	534	133	319	831	0.643	545	307	4.6	1.9	13.039
	C - Linked Arm	471	118	64	1281	0.368	472	800	0.8	0.6	4.456

18:00 - 18:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	U
1 - Bradford-Leafy Junction	A - Linked Arm	661	165	17	1265	0.523	663	396	1.7	1.1	6.007	
	B - Bradford Road (S)	281	70	184	894	0.314	281	496	0.6	0.5	5.883	
	C - Leafy Lane	154	38	258	653	0.235	154	208	0.4	0.3	7.217	
2 - Bradford-Westwells Junction	A - Bradford Road (N)	318	79	206	1046	0.304	318	242	0.6	0.4	4.952	
	B - Westwells Road	447	112	267	864	0.518	450	257	1.9	1.1	8.766	
	C - Linked Arm	394	99	53	1288	0.306	395	664	0.6	0.4	4.037	

Appendix 7

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462
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Filename: Park Lane rbt_v2-0.j9
Path: P:\2023\IMA-23-021 Spring Park P5 N&S S73 Application\Assessments\Park Lane Rbt
Report generation date: 04/07/2023 15:12:19

»2019 Survey, AM
»2019 Survey, PM
»2028 Baseline, AM
»2028 Baseline , PM
»2028 with Dev, AM
»2028 with Dev, PM
»Sensitivity Test (2028 With Dev), AM
»Sensitivity Test (2028 With Dev), PM

Summary of junction performance

	AM								PM							
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
2019 Survey																
Arm A	D1	0.2	3.30	0.15	A	4.65	A	120 % [Arm C]	D2	0.7	4.29	0.40	A	4.26	A	120 % [Arm A]
Arm B		0.0	3.72	0.01	A					0.0	4.90	0.04	A			
Arm C		0.7	5.57	0.40	A					0.4	4.83	0.26	A			
Arm D		0.4	4.30	0.28	A					0.1	3.09	0.12	A			
2028 Baseline																
Arm A	D3	0.3	3.39	0.24	A	5.42	A	67 % [Arm C]	D4	1.1	5.34	0.52	A	5.06	A	72 % [Arm A]
Arm B		0.0	4.11	0.03	A					0.1	5.72	0.05	A			
Arm C		1.1	6.95	0.53	A					0.6	5.48	0.36	A			
Arm D		0.6	4.98	0.36	A					0.2	3.28	0.16	A			
2028 with Dev																
Arm A	D5	0.3	3.43	0.25	A	5.74	A	58 % [Arm C]	D6	1.2	5.56	0.54	A	5.21	A	67 % [Arm A]
Arm B		0.0	4.14	0.03	A					0.1	5.86	0.06	A			
Arm C		1.3	7.49	0.56	A					0.6	5.52	0.36	A			
Arm D		0.6	5.14	0.36	A					0.2	3.29	0.16	A			
Sensitivity Test (2028 With Dev)																
Arm A	D7	0.3	3.42	0.25	A	5.86	A	55 % [Arm C]	D8	1.2	5.58	0.54	A	5.23	A	66 % [Arm A]
Arm B		0.0	4.13	0.03	A					0.1	5.88	0.06	A			
Arm C		1.3	7.68	0.57	A					0.6	5.55	0.37	A			
Arm D		0.6	5.19	0.37	A					0.2	3.30	0.16	A			

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

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	Spring Park Business Centre
Location	Corsham
Site number	
Date	03/10/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	IMA-19-137
Enumerator	IMA-TP\TRL
Description	

Units

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

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75			✓	Delay	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
D1	2019 Survey	AM	ONE HOUR	07:45	09:15	15	✓
D2	2019 Survey	PM	ONE HOUR	16:45	18:15	15	✓
D3	2028 Baseline	AM	ONE HOUR	07:45	09:15	15	✓
D4	2028 Baseline	PM	ONE HOUR	16:45	18:15	15	✓
D5	2028 with Dev	AM	ONE HOUR	07:45	09:15	15	✓
D6	2028 with Dev	PM	ONE HOUR	16:45	18:15	15	✓
D7	Sensitivity Test (2028 With Dev)	AM	ONE HOUR	07:45	09:15	15	✓
D8	Sensitivity Test (2028 With Dev)	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

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

2019 Survey, 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	Park Lane	Standard Roundabout		A, B, C, D	4.65	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	120	Arm C

Arms

Arms

Arm	Name	Description
A	Westwells Road (E)	
B	MoD Rudloe	
C	Westwells Road (W)	
D	Park Lane	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A	3.30	5.42	8.1	27.0	32.0	4.0	
B	3.50	3.50	0.0	25.0	32.0	12.0	
C	2.55	5.63	7.7	24.0	32.0	38.0	
D	2.90	6.49	13.8	14.0	32.0	33.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.644	1488
B	0.563	1137
C	0.539	1158
D	0.590	1426

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2019 Survey	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	198	100.000
B		ONE HOUR	✓	6	100.000
C		ONE HOUR	✓	410	100.000
D		ONE HOUR	✓	305	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	24	124	50
	B	5	0	0	1
	C	340	7	0	63
	D	206	8	91	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	12	9
	B	0	0	0	0
	C	4	0	0	5
	D	1	0	8	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.15	3.30	0.2	A	182	273
B	0.01	3.72	0.0	A	6	8
C	0.40	5.57	0.7	A	376	564
D	0.28	4.30	0.4	A	280	420

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	149	37	79	1436	0.104	149	413	0.0	0.1	3.062	A
B	5	1	199	1025	0.004	4	29	0.0	0.0	3.526	A
C	309	77	42	1135	0.272	307	161	0.0	0.4	4.518	A
D	230	57	264	1271	0.181	229	85	0.0	0.2	3.554	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	178	44	95	1426	0.125	178	495	0.1	0.2	3.161	A
B	5	1	238	1003	0.005	5	35	0.0	0.0	3.607	A
C	369	92	50	1130	0.326	368	193	0.4	0.5	4.911	A
D	274	69	316	1240	0.221	274	102	0.2	0.3	3.838	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	218	55	117	1413	0.154	218	606	0.2	0.2	3.303	A
B	7	2	291	973	0.007	7	43	0.0	0.0	3.724	A
C	451	113	62	1124	0.401	451	236	0.5	0.7	5.556	A
D	336	84	387	1198	0.280	335	125	0.3	0.4	4.296	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	218	55	117	1413	0.154	218	607	0.2	0.2	3.303	A
B	7	2	292	973	0.007	7	43	0.0	0.0	3.725	A
C	451	113	62	1124	0.401	451	237	0.7	0.7	5.567	A
D	336	84	388	1197	0.280	336	126	0.4	0.4	4.301	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	178	44	95	1426	0.125	178	496	0.2	0.2	3.162	A
B	5	1	239	1003	0.005	5	35	0.0	0.0	3.611	A
C	369	92	50	1130	0.326	369	194	0.7	0.5	4.927	A
D	274	69	317	1239	0.221	275	103	0.4	0.3	3.846	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	149	37	80	1436	0.104	149	415	0.2	0.1	3.066	A
B	5	1	200	1025	0.004	5	29	0.0	0.0	3.530	A
C	309	77	42	1135	0.272	309	162	0.5	0.4	4.539	A
D	230	57	265	1270	0.181	230	86	0.3	0.2	3.565	A

2019 Survey, 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	Park Lane	Standard Roundabout		A, B, C, D	4.26	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	120	Arm A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2019 Survey	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	520	100.000
B		ONE HOUR	✓	25	100.000
C		ONE HOUR	✓	251	100.000
D		ONE HOUR	✓	149	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	3	352	165
	B	5	0	10	10
	C	105	0	0	146
	D	60	0	89	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	60	2	0
	B	0	0	0	0
	C	1	0	0	6
	D	0	0	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.40	4.29	0.7	A	477	716
B	0.04	4.90	0.0	A	23	34
C	0.26	4.83	0.4	A	230	345
D	0.12	3.09	0.1	A	137	205

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	391	98	67	1445	0.271	390	127	0.0	0.4	3.462	A
B	19	5	455	881	0.021	19	2	0.0	0.0	4.174	A
C	189	47	135	1085	0.174	188	338	0.0	0.2	4.166	A
D	112	28	82	1377	0.081	112	241	0.0	0.1	2.911	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	467	117	80	1436	0.326	467	153	0.4	0.5	3.770	A
B	22	6	544	831	0.027	22	3	0.0	0.0	4.454	A
C	226	56	162	1070	0.211	225	405	0.2	0.3	4.423	A
D	134	33	99	1368	0.098	134	288	0.1	0.1	2.985	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	573	143	98	1425	0.402	572	187	0.5	0.7	4.284	A
B	28	7	666	762	0.036	27	3	0.0	0.0	4.902	A
C	276	69	198	1051	0.263	276	496	0.3	0.4	4.822	A
D	164	41	121	1355	0.121	164	353	0.1	0.1	3.093	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	573	143	98	1425	0.402	573	187	0.7	0.7	4.291	A
B	28	7	667	761	0.036	28	3	0.0	0.0	4.905	A
C	276	69	198	1051	0.263	276	497	0.4	0.4	4.827	A
D	164	41	121	1355	0.121	164	353	0.1	0.1	3.094	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	467	117	80	1436	0.326	468	153	0.7	0.5	3.779	A
B	22	6	546	830	0.027	23	3	0.0	0.0	4.460	A
C	226	56	162	1070	0.211	226	406	0.4	0.3	4.429	A
D	134	33	99	1368	0.098	134	289	0.1	0.1	2.986	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	391	98	67	1444	0.271	392	128	0.5	0.4	3.474	A
B	19	5	457	880	0.021	19	2	0.0	0.0	4.182	A
C	189	47	136	1084	0.174	189	340	0.3	0.2	4.176	A
D	112	28	83	1377	0.081	112	242	0.1	0.1	2.914	A

2028 Baseline, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Park Lane	Standard Roundabout		A, B, C, D	5.42	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	67	Arm C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2028 Baseline	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	306	100.000
B		ONE HOUR	✓	25	100.000
C		ONE HOUR	✓	529	100.000
D		ONE HOUR	✓	364	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	26	195	85
	B	5	0	14	6
	C	441	20	0	68
	D	256	10	98	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.24	3.39	0.3	A	281	421
B	0.03	4.11	0.0	A	23	34
C	0.53	6.95	1.1	A	485	728
D	0.36	4.98	0.6	A	334	501

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	230	58	96	1426	0.162	230	526	0.0	0.2	3.008	A
B	19	5	284	977	0.019	19	42	0.0	0.0	3.754	A
C	398	100	72	1119	0.356	396	230	0.0	0.5	4.966	A
D	274	69	349	1220	0.225	273	119	0.0	0.3	3.794	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	275	69	115	1414	0.195	275	630	0.2	0.2	3.161	A
B	22	6	340	946	0.024	22	50	0.0	0.0	3.898	A
C	476	119	86	1111	0.428	475	276	0.5	0.7	5.650	A
D	327	82	418	1179	0.277	327	143	0.3	0.4	4.221	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	337	84	141	1397	0.241	337	771	0.2	0.3	3.394	A
B	28	7	416	903	0.030	27	62	0.0	0.0	4.111	A
C	582	146	106	1101	0.529	581	338	0.7	1.1	6.907	A
D	401	100	512	1124	0.357	400	175	0.4	0.5	4.968	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	337	84	141	1397	0.241	337	773	0.3	0.3	3.395	A
B	28	7	416	903	0.030	28	62	0.0	0.0	4.113	A
C	582	146	106	1101	0.529	582	338	1.1	1.1	6.946	A
D	401	100	513	1123	0.357	401	175	0.5	0.6	4.981	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	275	69	115	1413	0.195	275	633	0.3	0.2	3.163	A
B	22	6	340	945	0.024	23	50	0.0	0.0	3.901	A
C	476	119	86	1111	0.428	477	276	1.1	0.8	5.690	A
D	327	82	420	1178	0.278	328	143	0.6	0.4	4.236	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	230	58	97	1426	0.162	231	529	0.2	0.2	3.014	A
B	19	5	285	977	0.019	19	42	0.0	0.0	3.760	A
C	398	100	72	1119	0.356	399	231	0.8	0.6	5.010	A
D	274	69	352	1219	0.225	274	120	0.4	0.3	3.813	A

2028 Baseline , PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Park Lane	Standard Roundabout		A, B, C, D	5.06	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	72	Arm A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2028 Baseline	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	667	100.000
B		ONE HOUR	✓	33	100.000
C		ONE HOUR	✓	334	100.000
D		ONE HOUR	✓	192	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	3	456	208
	B	5	0	17	11
	C	166	11	0	157
	D	92	4	96	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.52	5.34	1.1	A	612	918
B	0.05	5.72	0.1	A	30	46
C	0.36	5.48	0.6	A	306	460
D	0.16	3.28	0.2	A	176	264

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	502	126	83	1434	0.350	500	197	0.0	0.5	3.846	A
B	25	6	570	816	0.031	25	13	0.0	0.0	4.549	A
C	251	63	168	1067	0.236	250	426	0.0	0.3	4.402	A
D	145	36	137	1345	0.107	144	282	0.0	0.1	2.994	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	600	150	100	1423	0.421	599	237	0.5	0.7	4.362	A
B	30	7	682	753	0.040	30	16	0.0	0.0	4.979	A
C	300	75	201	1049	0.286	300	511	0.3	0.4	4.803	A
D	173	43	164	1329	0.130	172	338	0.1	0.1	3.111	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	734	184	122	1409	0.521	733	290	0.7	1.1	5.314	A
B	37	9	835	667	0.055	36	20	0.0	0.1	5.712	A
C	368	92	247	1025	0.359	367	625	0.4	0.6	5.470	A
D	211	53	200	1308	0.162	211	413	0.1	0.2	3.282	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	734	184	122	1409	0.521	734	290	1.1	1.1	5.336	A
B	37	9	837	666	0.055	37	20	0.1	0.1	5.719	A
C	368	92	247	1024	0.359	368	626	0.6	0.6	5.481	A
D	211	53	201	1308	0.162	211	414	0.2	0.2	3.283	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	600	150	100	1423	0.421	601	237	1.1	0.7	4.384	A
B	30	7	685	751	0.040	30	16	0.1	0.0	4.990	A
C	300	75	202	1049	0.286	301	512	0.6	0.4	4.819	A
D	173	43	164	1329	0.130	173	339	0.2	0.1	3.112	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	502	126	84	1434	0.350	503	199	0.7	0.5	3.871	A
B	25	6	573	814	0.031	25	14	0.0	0.0	4.560	A
C	251	63	169	1066	0.236	252	429	0.4	0.3	4.422	A
D	145	36	138	1345	0.107	145	284	0.1	0.1	2.998	A

2028 with Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Park Lane	Standard Roundabout		A, B, C, D	5.74	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	58	Arm C

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	2028 with 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	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	316	100.000
B		ONE HOUR	✓	25	100.000
C		ONE HOUR	✓	563	100.000
D		ONE HOUR	✓	364	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	26	205	85
	B	5	0	14	6
	C	475	20	0	68
	D	256	10	98	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.25	3.43	0.3	A	290	435
B	0.03	4.14	0.0	A	23	35
C	0.56	7.49	1.3	A	517	775
D	0.36	5.14	0.6	A	334	501

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	238	59	96	1426	0.167	237	552	0.0	0.2	3.027	A
B	19	5	291	973	0.020	19	42	0.0	0.0	3.772	A
C	424	106	72	1119	0.379	421	238	0.0	0.6	5.146	A
D	274	69	375	1205	0.227	273	119	0.0	0.3	3.857	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	284	71	115	1414	0.201	284	661	0.2	0.3	3.186	A
B	23	6	349	941	0.024	23	50	0.0	0.0	3.921	A
C	506	127	87	1111	0.456	505	285	0.6	0.8	5.935	A
D	327	82	449	1161	0.282	327	143	0.3	0.4	4.313	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	348	87	141	1397	0.249	348	809	0.3	0.3	3.430	A
B	28	7	427	897	0.031	28	62	0.0	0.0	4.143	A
C	620	155	106	1100	0.563	618	349	0.8	1.3	7.437	A
D	401	100	549	1102	0.364	400	175	0.4	0.6	5.123	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	348	87	141	1397	0.249	348	811	0.3	0.3	3.431	A
B	28	7	427	897	0.031	28	62	0.0	0.0	4.144	A
C	620	155	106	1100	0.563	620	349	1.3	1.3	7.490	A
D	401	100	551	1101	0.364	401	175	0.6	0.6	5.140	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	284	71	115	1413	0.201	284	664	0.3	0.3	3.191	A
B	23	6	349	940	0.024	23	50	0.0	0.0	3.923	A
C	506	127	87	1111	0.456	508	285	1.3	0.8	5.988	A
D	327	82	451	1160	0.282	328	143	0.6	0.4	4.332	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	238	59	97	1426	0.167	238	555	0.3	0.2	3.031	A
B	19	5	292	972	0.020	19	42	0.0	0.0	3.775	A
C	424	106	73	1118	0.379	425	239	0.8	0.6	5.196	A
D	274	69	378	1203	0.228	274	120	0.4	0.3	3.876	A

2028 with Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Park Lane	Standard Roundabout		A, B, C, D	5.21	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	67	Arm A

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	2028 with 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	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	692	100.000
B		ONE HOUR	✓	33	100.000
C		ONE HOUR	✓	338	100.000
D		ONE HOUR	✓	192	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	3	481	208
	B	5	0	17	11
	C	170	11	0	157
	D	92	4	96	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.54	5.56	1.2	A	635	952
B	0.06	5.86	0.1	A	30	46
C	0.36	5.52	0.6	A	310	465
D	0.16	3.29	0.2	A	176	264

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	521	130	83	1434	0.363	519	200	0.0	0.6	3.924	A
B	25	6	588	806	0.031	25	13	0.0	0.0	4.610	A
C	254	64	168	1067	0.238	253	445	0.0	0.3	4.418	A
D	145	36	140	1344	0.108	144	282	0.0	0.1	2.999	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	622	156	100	1423	0.437	621	240	0.6	0.8	4.483	A
B	30	7	705	740	0.040	30	16	0.0	0.0	5.067	A
C	304	76	201	1049	0.290	303	533	0.3	0.4	4.826	A
D	173	43	167	1327	0.130	172	338	0.1	0.1	3.116	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	762	190	122	1409	0.541	760	294	0.8	1.2	5.536	A
B	37	9	863	651	0.056	36	20	0.0	0.1	5.855	A
C	372	93	247	1025	0.363	372	653	0.4	0.6	5.505	A
D	211	53	205	1305	0.162	211	413	0.1	0.2	3.290	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	762	190	122	1409	0.541	762	294	1.2	1.2	5.563	A
B	37	9	864	650	0.056	37	20	0.1	0.1	5.864	A
C	372	93	247	1024	0.363	372	654	0.6	0.6	5.518	A
D	211	53	205	1305	0.162	211	414	0.2	0.2	3.291	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	622	156	100	1423	0.437	624	241	1.2	0.8	4.510	A
B	30	7	707	739	0.040	30	16	0.1	0.0	5.078	A
C	304	76	202	1049	0.290	304	535	0.6	0.4	4.843	A
D	173	43	168	1327	0.130	173	339	0.2	0.2	3.118	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	521	130	84	1434	0.363	522	202	0.8	0.6	3.950	A
B	25	6	592	804	0.031	25	14	0.0	0.0	4.624	A
C	254	64	169	1066	0.239	255	448	0.4	0.3	4.439	A
D	145	36	141	1343	0.108	145	284	0.2	0.1	3.005	A

Sensitivity Test (2028 With Dev), AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Park Lane	Standard Roundabout		A, B, C, D	5.86	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	55	Arm C

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	Sensitivity Test (2028 With 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	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	312	100.000
B		ONE HOUR	✓	25	100.000
C		ONE HOUR	✓	574	100.000
D		ONE HOUR	✓	364	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	26	201	85
	B	5	0	14	6
	C	486	20	0	68
	D	256	10	98	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.25	3.42	0.3	A	286	429
B	0.03	4.13	0.0	A	23	35
C	0.57	7.68	1.3	A	527	790
D	0.37	5.19	0.6	A	334	501

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	235	59	96	1426	0.165	234	560	0.0	0.2	3.019	A
B	19	5	288	975	0.020	19	42	0.0	0.0	3.765	A
C	432	108	72	1119	0.386	430	235	0.0	0.6	5.206	A
D	274	69	383	1200	0.228	273	119	0.0	0.3	3.877	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	280	70	115	1414	0.198	280	671	0.2	0.2	3.176	A
B	23	6	345	943	0.024	23	50	0.0	0.0	3.912	A
C	516	129	87	1111	0.464	515	281	0.6	0.9	6.031	A
D	327	82	459	1155	0.283	327	143	0.3	0.4	4.343	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	344	86	141	1397	0.246	343	821	0.2	0.3	3.416	A
B	28	7	422	899	0.031	28	62	0.0	0.0	4.131	A
C	632	158	106	1100	0.574	630	344	0.9	1.3	7.622	A
D	401	100	561	1095	0.366	400	175	0.4	0.6	5.176	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	344	86	141	1397	0.246	344	823	0.3	0.3	3.416	A
B	28	7	423	899	0.031	28	62	0.0	0.0	4.132	A
C	632	158	106	1100	0.574	632	345	1.3	1.3	7.681	A
D	401	100	563	1094	0.366	401	175	0.6	0.6	5.193	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	280	70	115	1413	0.198	281	674	0.3	0.2	3.181	A
B	23	6	346	942	0.024	23	50	0.0	0.0	3.914	A
C	516	129	87	1111	0.465	518	282	1.3	0.9	6.091	A
D	327	82	461	1154	0.284	328	143	0.6	0.4	4.362	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	235	59	97	1426	0.165	235	564	0.2	0.2	3.023	A
B	19	5	289	974	0.020	19	42	0.0	0.0	3.771	A
C	432	108	73	1118	0.386	433	236	0.9	0.6	5.259	A
D	274	69	386	1198	0.229	274	120	0.4	0.3	3.897	A

Sensitivity Test (2028 With Dev), PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Park Lane	Standard Roundabout		A, B, C, D	5.23	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	66	Arm A

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	Sensitivity Test (2028 With 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	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	694	100.000
B		ONE HOUR	✓	33	100.000
C		ONE HOUR	✓	341	100.000
D		ONE HOUR	✓	192	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	3	483	208
	B	5	0	17	11
	C	173	11	0	157
	D	92	4	96	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	0	0
	B	0	0	0	0
	C	0	0	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.54	5.58	1.2	A	637	955
B	0.06	5.88	0.1	A	30	46
C	0.37	5.55	0.6	A	313	469
D	0.16	3.30	0.2	A	176	264

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	522	131	83	1434	0.364	520	203	0.0	0.6	3.930	A
B	25	6	590	805	0.031	25	13	0.0	0.0	4.615	A
C	257	64	168	1067	0.241	255	447	0.0	0.3	4.430	A
D	145	36	142	1342	0.108	144	282	0.0	0.1	3.002	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	624	156	100	1423	0.438	623	243	0.6	0.8	4.493	A
B	30	7	707	739	0.040	30	16	0.0	0.0	5.074	A
C	307	77	201	1049	0.292	306	535	0.3	0.4	4.844	A
D	173	43	170	1326	0.130	172	338	0.1	0.1	3.121	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	764	191	122	1409	0.542	763	297	0.8	1.2	5.555	A
B	37	9	865	650	0.056	36	20	0.0	0.1	5.867	A
C	375	94	247	1025	0.366	375	655	0.4	0.6	5.533	A
D	211	53	208	1303	0.162	211	413	0.1	0.2	3.296	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	764	191	122	1409	0.542	764	298	1.2	1.2	5.582	A
B	37	9	866	649	0.056	37	20	0.1	0.1	5.875	A
C	375	94	247	1024	0.366	375	656	0.6	0.6	5.546	A
D	211	53	209	1303	0.162	211	414	0.2	0.2	3.296	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	624	156	100	1423	0.438	625	243	1.2	0.8	4.520	A
B	30	7	709	738	0.040	30	16	0.1	0.0	5.085	A
C	307	77	202	1049	0.292	307	537	0.6	0.4	4.861	A
D	173	43	171	1325	0.130	173	339	0.2	0.2	3.125	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	522	131	84	1434	0.364	523	204	0.8	0.6	3.957	A
B	25	6	593	803	0.031	25	14	0.0	0.0	4.627	A
C	257	64	169	1066	0.241	257	449	0.4	0.3	4.451	A
D	145	36	143	1342	0.108	145	284	0.2	0.1	3.009	A

Appendix 8

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462
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Filename: Spring Park Rdbt_v2-0.j9
Path: P:\2023\IMA-23-021 Spring Park P5 N&S S73 Application\Assessments\Site Access
Report generation date: 04/07/2023 15:21:17

»2019 Survey, AM
»2019 Survey, PM
»2028 Baseline, AM
»2028 Baseline, PM
»2028 with Development, AM
»2028 with Development, PM
»Sensitivity Test (2028 With Development), AM
»Sensitivity Test (2028 With Development), PM

Summary of junction performance

	AM								PM							
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
2019 Survey																
Arm A	D1	0.2	2.97	0.14	A	2.65	A	298 % [Arm C]	D2	0.4	3.36	0.29	A	2.97	A	226 % [Arm A]
Arm B		0.0	4.30	0.01	A					0.0	2.97	0.03	A			
Arm C		0.3	2.45	0.24	A					0.1	2.06	0.10	A			
2028 Baseline																
Arm A	D3	0.2	2.97	0.18	A	2.73	A	221 % [Arm C]	D4	0.5	3.53	0.33	A	3.08	A	182 % [Arm A]
Arm B		0.0	2.68	0.02	A					0.1	3.21	0.08	A			
Arm C		0.4	2.62	0.30	A					0.1	2.11	0.13	A			
2028 with Development																
Arm A	D5	0.2	3.06	0.19	A	2.81	A	202 % [Arm C]	D6	0.5	3.56	0.34	A	3.11	A	177 % [Arm A]
Arm B		0.0	2.69	0.02	A					0.1	3.29	0.10	A			
Arm C		0.5	2.69	0.32	A					0.1	2.12	0.13	A			
Sensitivity Test (2028 With Development)																
Arm A	D7	0.2	3.08	0.19	A	2.83	A	196 % [Arm C]	D8	0.5	3.57	0.34	A	3.11	A	176 % [Arm A]
Arm B		0.0	2.69	0.02	A					0.1	3.30	0.10	A			
Arm C		0.5	2.72	0.32	A					0.2	2.12	0.13	A			

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

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	Spring Park Rdbt.
Location	Corsham
Site number	
Date	04/10/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	IMA-19-137
Enumerator	IMA-TP\TRL
Description	

Units

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

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75			✓	Delay	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
D1	2019 Survey	AM	ONE HOUR	07:45	09:15	15	✓
D2	2019 Survey	PM	ONE HOUR	16:45	18:15	15	✓
D3	2028 Baseline	AM	ONE HOUR	07:45	09:15	15	✓
D4	2028 Baseline	PM	ONE HOUR	16:45	18:15	15	✓
D5	2028 with Development	AM	ONE HOUR	07:45	09:15	15	✓
D6	2028 with Development	PM	ONE HOUR	16:45	18:15	15	✓
D7	Sensitivity Test (2028 With Development)	AM	ONE HOUR	07:45	09:15	15	✓
D8	Sensitivity Test (2028 With Development)	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

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

2019 Survey, 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	untitled	Standard Roundabout		A, B, C	2.65	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	298	Arm C

Arms

Arms

Arm	Name	Description
A	Westwells Road (E)	
B	Spring Park	
C	Westwells Road (W)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A	4.45	6.07	7.1	15.0	30.0	42.0	
B	3.69	6.36	12.5	15.0	30.0	39.0	
C	4.75	6.79	9.4	15.0	30.0	0.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.607	1537
B	0.607	1523
C	0.739	1963

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2019 Survey	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	198	100.000
B		ONE HOUR	✓	14	100.000
C		ONE HOUR	✓	425	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	12	186
	B	9	0	5
	C	383	42	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	43	5
	B	60	0	75
	C	1	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.14	2.97	0.2	A	182	273
B	0.01	4.30	0.0	A	13	19
C	0.24	2.45	0.3	A	390	585

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	149	37	32	1518	0.098	149	294	0.0	0.1	2.805	A
B	11	3	140	1438	0.007	10	41	0.0	0.0	4.162	A
C	320	80	7	1958	0.163	319	143	0.0	0.2	2.224	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	178	44	38	1514	0.118	178	352	0.1	0.1	2.874	A
B	13	3	167	1421	0.009	13	49	0.0	0.0	4.217	A
C	382	96	8	1957	0.195	382	172	0.2	0.2	2.315	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	218	55	46	1509	0.144	218	431	0.1	0.2	2.974	A
B	15	4	205	1398	0.011	15	59	0.0	0.0	4.295	A
C	468	117	10	1955	0.239	468	210	0.2	0.3	2.450	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	218	55	46	1509	0.144	218	432	0.2	0.2	2.974	A
B	15	4	205	1398	0.011	15	59	0.0	0.0	4.296	A
C	468	117	10	1955	0.239	468	210	0.3	0.3	2.450	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	178	44	38	1514	0.118	178	353	0.2	0.1	2.877	A
B	13	3	167	1421	0.009	13	49	0.0	0.0	4.220	A
C	382	96	8	1957	0.195	382	172	0.3	0.2	2.317	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	149	37	32	1518	0.098	149	295	0.1	0.1	2.806	A
B	11	3	140	1438	0.007	11	41	0.0	0.0	4.165	A
C	320	80	7	1958	0.163	320	144	0.2	0.2	2.226	A

2019 Survey, 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	untitled	Standard Roundabout		A, B, C	2.97	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	226	Arm A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2019 Survey	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	403	100.000
B		ONE HOUR	✓	39	100.000
C		ONE HOUR	✓	174	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	2	401
	B	5	0	34
	C	170	4	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	0	0	0
	C	1	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.29	3.36	0.4	A	370	555
B	0.03	2.97	0.0	A	36	54
C	0.10	2.06	0.1	A	160	239

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	303	76	3	1535	0.198	302	131	0.0	0.3	2.975	A
B	29	7	301	1340	0.022	29	5	0.0	0.0	2.746	A
C	131	33	4	1960	0.067	131	326	0.0	0.1	1.989	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	362	91	4	1535	0.236	362	157	0.3	0.3	3.130	A
B	35	9	360	1304	0.027	35	5	0.0	0.0	2.836	A
C	156	39	4	1959	0.080	156	391	0.1	0.1	2.017	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	444	111	4	1535	0.289	443	193	0.3	0.4	3.365	A
B	43	11	441	1255	0.034	43	7	0.0	0.0	2.969	A
C	192	48	6	1959	0.098	191	479	0.1	0.1	2.058	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	444	111	4	1535	0.289	444	193	0.4	0.4	3.365	A
B	43	11	442	1255	0.034	43	7	0.0	0.0	2.970	A
C	192	48	6	1959	0.098	192	479	0.1	0.1	2.058	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	362	91	4	1535	0.236	363	157	0.4	0.3	3.134	A
B	35	9	361	1304	0.027	35	5	0.0	0.0	2.837	A
C	156	39	4	1959	0.080	157	391	0.1	0.1	2.019	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	303	76	3	1535	0.198	304	132	0.3	0.3	2.983	A
B	29	7	302	1339	0.022	29	5	0.0	0.0	2.749	A
C	131	33	4	1960	0.067	131	328	0.1	0.1	1.989	A

2028 Baseline, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C	2.73	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	221	Arm C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2028 Baseline	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	245	100.000
B		ONE HOUR	✓	24	100.000
C		ONE HOUR	✓	527	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	17	228
	B	10	0	14
	C	441	86	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.18	2.97	0.2	A	225	337
B	0.02	2.68	0.0	A	22	33
C	0.30	2.62	0.4	A	484	725

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	184	46	65	1498	0.123	184	339	0.0	0.1	2.737	A
B	18	5	171	1419	0.013	18	77	0.0	0.0	2.569	A
C	397	99	8	1957	0.203	396	182	0.0	0.3	2.304	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	220	55	77	1490	0.148	220	405	0.1	0.2	2.833	A
B	22	5	205	1398	0.015	22	93	0.0	0.0	2.614	A
C	474	118	9	1956	0.242	474	217	0.3	0.3	2.428	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	270	67	95	1480	0.182	270	496	0.2	0.2	2.974	A
B	26	7	251	1370	0.019	26	113	0.0	0.0	2.678	A
C	580	145	11	1955	0.297	580	266	0.3	0.4	2.618	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	270	67	95	1480	0.182	270	497	0.2	0.2	2.974	A
B	26	7	251	1370	0.019	26	113	0.0	0.0	2.678	A
C	580	145	11	1955	0.297	580	266	0.4	0.4	2.618	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	220	55	77	1490	0.148	220	406	0.2	0.2	2.837	A
B	22	5	205	1398	0.015	22	93	0.0	0.0	2.616	A
C	474	118	9	1956	0.242	474	218	0.4	0.3	2.429	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	184	46	65	1498	0.123	185	340	0.2	0.1	2.740	A
B	18	5	172	1418	0.013	18	78	0.0	0.0	2.570	A
C	397	99	8	1957	0.203	397	182	0.3	0.3	2.307	A

2028 Baseline, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C	3.08	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	182	Arm A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2028 Baseline	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	460	100.000
B		ONE HOUR	✓	87	100.000
C		ONE HOUR	✓	226	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	3	457
	B	10	0	77
	C	210	16	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.33	3.53	0.5	A	422	633
B	0.08	3.21	0.1	A	80	120
C	0.13	2.11	0.1	A	207	311

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	346	87	12	1530	0.226	345	165	0.0	0.3	3.036	A
B	65	16	343	1315	0.050	65	14	0.0	0.1	2.881	A
C	170	43	8	1957	0.087	170	401	0.0	0.1	2.014	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	414	103	14	1528	0.271	413	198	0.3	0.4	3.228	A
B	78	20	411	1273	0.061	78	17	0.1	0.1	3.011	A
C	203	51	9	1956	0.104	203	480	0.1	0.1	2.053	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	506	127	18	1526	0.332	506	242	0.4	0.5	3.525	A
B	96	24	503	1218	0.079	96	21	0.1	0.1	3.208	A
C	249	62	11	1955	0.127	249	587	0.1	0.1	2.110	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	506	127	18	1526	0.332	506	242	0.5	0.5	3.528	A
B	96	24	503	1217	0.079	96	21	0.1	0.1	3.209	A
C	249	62	11	1955	0.127	249	588	0.1	0.1	2.110	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	414	103	14	1528	0.271	414	198	0.5	0.4	3.233	A
B	78	20	411	1273	0.061	78	17	0.1	0.1	3.012	A
C	203	51	9	1956	0.104	203	481	0.1	0.1	2.053	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	346	87	12	1530	0.226	347	166	0.4	0.3	3.045	A
B	65	16	344	1314	0.050	66	14	0.1	0.1	2.886	A
C	170	43	8	1957	0.087	170	402	0.1	0.1	2.014	A

2028 with Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C	2.81	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	202	Arm C

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	2028 with Development	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	257	100.000
B		ONE HOUR	✓	26	100.000
C		ONE HOUR	✓	561	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	21	236
	B	10	0	16
	C	441	120	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.19	3.06	0.2	A	236	353
B	0.02	2.69	0.0	A	24	36
C	0.32	2.69	0.5	A	515	772

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	193	48	90	1482	0.130	193	339	0.0	0.1	2.789	A
B	20	5	177	1415	0.014	20	106	0.0	0.0	2.579	A
C	423	106	8	1957	0.216	421	189	0.0	0.3	2.343	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	231	58	108	1472	0.157	231	405	0.1	0.2	2.900	A
B	23	6	212	1394	0.017	23	127	0.0	0.0	2.626	A
C	505	126	9	1956	0.258	504	226	0.3	0.3	2.479	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	283	71	132	1457	0.194	283	496	0.2	0.2	3.065	A
B	29	7	260	1365	0.021	29	155	0.0	0.0	2.693	A
C	618	154	11	1955	0.316	617	277	0.3	0.5	2.692	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	283	71	132	1457	0.194	283	497	0.2	0.2	3.065	A
B	29	7	260	1365	0.021	29	155	0.0	0.0	2.693	A
C	618	154	11	1955	0.316	618	277	0.5	0.5	2.692	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	231	58	108	1472	0.157	231	406	0.2	0.2	2.901	A
B	23	6	212	1394	0.017	23	127	0.0	0.0	2.626	A
C	505	126	9	1956	0.258	505	227	0.5	0.3	2.483	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	193	48	91	1482	0.130	193	340	0.2	0.2	2.793	A
B	20	5	178	1415	0.014	20	106	0.0	0.0	2.581	A
C	423	106	8	1957	0.216	423	190	0.3	0.3	2.346	A

2028 with Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C	3.11	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	177	Arm A

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	2028 with Development	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	465	100.000
B		ONE HOUR	✓	109	100.000
C		ONE HOUR	✓	230	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	3	462
	B	12	0	97
	C	210	20	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.34	3.56	0.5	A	427	641
B	0.10	3.29	0.1	A	100	150
C	0.13	2.12	0.1	A	211	316

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	350	88	15	1528	0.229	349	167	0.0	0.3	3.050	A
B	82	21	347	1312	0.063	82	17	0.0	0.1	2.925	A
C	173	43	9	1956	0.088	172	419	0.0	0.1	2.018	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	418	105	18	1526	0.274	418	199	0.3	0.4	3.248	A
B	98	24	415	1271	0.077	98	21	0.1	0.1	3.068	A
C	206	52	11	1955	0.106	206	502	0.1	0.1	2.058	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	512	128	22	1524	0.336	512	244	0.4	0.5	3.554	A
B	120	30	508	1214	0.099	120	25	0.1	0.1	3.289	A
C	253	63	13	1953	0.129	253	615	0.1	0.1	2.117	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	512	128	22	1524	0.336	512	244	0.5	0.5	3.557	A
B	120	30	509	1214	0.099	120	25	0.1	0.1	3.290	A
C	253	63	13	1953	0.129	253	615	0.1	0.1	2.117	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	418	105	18	1526	0.274	419	200	0.5	0.4	3.253	A
B	98	24	416	1270	0.077	98	21	0.1	0.1	3.070	A
C	206	52	11	1955	0.106	207	503	0.1	0.1	2.060	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	350	88	15	1528	0.229	351	167	0.4	0.3	3.059	A
B	82	21	348	1311	0.063	82	17	0.1	0.1	2.928	A
C	173	43	9	1956	0.088	173	421	0.1	0.1	2.018	A

Sensitivity Test (2028 With Development), AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C	2.83	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	196	Arm C

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	Sensitivity Test (2028 With Development)	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	256	100.000
B		ONE HOUR	✓	24	100.000
C		ONE HOUR	✓	572	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	22	234
	B	10	0	14
	C	441	131	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.19	3.08	0.2	A	235	352
B	0.02	2.69	0.0	A	22	33
C	0.32	2.72	0.5	A	525	787

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	193	48	98	1478	0.130	192	339	0.0	0.1	2.799	A
B	18	5	176	1416	0.013	18	115	0.0	0.0	2.574	A
C	431	108	8	1957	0.220	430	186	0.0	0.3	2.355	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	230	58	118	1466	0.157	230	405	0.1	0.2	2.912	A
B	22	5	210	1395	0.015	22	137	0.0	0.0	2.620	A
C	514	129	9	1956	0.263	514	223	0.3	0.4	2.496	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	282	70	144	1450	0.194	282	496	0.2	0.2	3.081	A
B	26	7	257	1366	0.019	26	168	0.0	0.0	2.686	A
C	630	157	11	1955	0.322	629	273	0.4	0.5	2.716	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	282	70	144	1450	0.194	282	497	0.2	0.2	3.081	A
B	26	7	258	1366	0.019	26	168	0.0	0.0	2.686	A
C	630	157	11	1955	0.322	630	273	0.5	0.5	2.716	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	230	58	118	1466	0.157	230	406	0.2	0.2	2.916	A
B	22	5	211	1395	0.015	22	138	0.0	0.0	2.621	A
C	514	129	9	1956	0.263	515	223	0.5	0.4	2.497	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	193	48	99	1477	0.130	193	340	0.2	0.2	2.802	A
B	18	5	176	1416	0.013	18	115	0.0	0.0	2.577	A
C	431	108	8	1957	0.220	431	187	0.4	0.3	2.360	A

Sensitivity Test (2028 With Development), PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		A, B, C	3.11	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	176	Arm A

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	Sensitivity Test (2028 With Development)	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	466	100.000
B		ONE HOUR	✓	111	100.000
C		ONE HOUR	✓	233	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	4	462
	B	12	0	99
	C	210	23	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.34	3.57	0.5	A	427	641
B	0.10	3.30	0.1	A	102	153
C	0.13	2.12	0.2	A	214	321

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	351	88	17	1527	0.230	349	167	0.0	0.3	3.055	A
B	84	21	347	1312	0.064	83	20	0.0	0.1	2.929	A
C	176	44	9	1956	0.090	175	421	0.0	0.1	2.021	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	419	105	21	1525	0.275	418	199	0.3	0.4	3.254	A
B	100	25	415	1271	0.079	100	24	0.1	0.1	3.073	A
C	210	52	11	1955	0.107	210	504	0.1	0.1	2.062	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	513	128	26	1522	0.337	512	244	0.4	0.5	3.564	A
B	122	31	508	1214	0.101	122	30	0.1	0.1	3.295	A
C	257	64	13	1953	0.131	257	617	0.1	0.2	2.121	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	513	128	26	1522	0.337	513	244	0.5	0.5	3.567	A
B	122	31	509	1214	0.101	122	30	0.1	0.1	3.296	A
C	257	64	13	1953	0.131	257	618	0.2	0.2	2.121	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	419	105	21	1525	0.275	419	200	0.5	0.4	3.257	A
B	100	25	416	1270	0.079	100	24	0.1	0.1	3.077	A
C	210	52	11	1955	0.107	210	505	0.2	0.1	2.062	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
A	351	88	17	1527	0.230	351	167	0.4	0.3	3.062	A
B	84	21	348	1311	0.064	84	20	0.1	0.1	2.934	A
C	176	44	9	1956	0.090	176	423	0.1	0.1	2.021	A

Appendix 9

TRANSPORT PLANNING

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E. bath@ima-tp.com

Job Name:	**Spring Park Travel Plan**	Job N$^{o.}$	**IMA-23-021**
Date:	June 2023	Client:	Ark Data Centres

Travel Plan Statement – Spring Park P5 North + South

1 Introduction

1.1 This Travel Plan Statement has been prepared to support a planning application that seeks permission for erection of a new data centres, called P5, at the Spring Park site in Corsham, Wiltshire.

1.2 This Travel Plan Statement follows a similar format to the Travel Statements produced for some of Ark's other buildings on the Spring Park site.

1.3 This Travel Plan Statement is written such that sections of it can distributed by Ark Data Centres (the site occupiers) to make staff aware of the ways in which they can, or will be able to access the site on foot, by bus or by cycle. The benefits of car sharing are also set-out. This Travel Plan Statement also sets out what measures Ark will seek to put in place to facilitate and make staff aware of any travel opportunities.

1.4 Unit P5 is data centre, essentially a storage area for computers. As a result, they have minimal staffing needs. Typical, staffing levels are:

> Day - 5 staff comprising: 2 Engineers, I contract administrator, 1 security manager and 1 security staff
>
> Night - 2 staff comprising: 1 engineer and 1 security staff

2 Site and Surroundings - Description

2.1 The proposed P5 North and South data centres site lie to the east of the main Spring Park site which is located at the southern end of Westwells Road, Corsham. The site is approximately 2.5km south west of Corsham town centre. The location of the site is shown on Plan 1.

2.2 To the southeast of Westwells Road lies the village of Westwells. To the northwest, Westwells Road meets Park Lane (from the northeast) at a roundabout, with Park Lane being the minor arm. Park Lane head in a north-easterly direction towards Corsham town centre, meeting up with the A4 some 1.8km distant.

2.3 Some 250m further north, lies a double mini roundabout junction at which Westwells Road connects with the B3109 (which forms the north-eastern and southern arms. Leafy Lane connects into the roundabouts from the east. The double mini-roundabout is known as the Leafy Lane roundabout.

2.4 To the northeast, the B3109 provides access to the A4, linking in turn with Chippenham (to the east) and Bath (to the west). To the south it heads towards Melksham, Trowbridge and Bradford on Avon, but is also to reach Bath by this route via Box or Bathford. Leafy Lane joins with the A4 to the west.

2.5 Plan 1 shows the surrounding roads in more detail.

3 Non-Car Access

Access by Foot

3.1 Westwells Road has a continuous footway on either side. The footway runs to the village of Westwells, to the southeast, and to the north it passes Park Lane, and runs up to the Leafy Lane double mini-roundabouts

3.2 Crossing facilities on Westwells Road are integrated into the Spring Park access junction and the Park Lane/Westwells Road roundabout to the north. The facilities take the form of central splitter islands allowing pedestrians to cross on an arm-by-arm basis.

3.3 Looking beyond Westwells Road, for pedestrians heading northeast on Park Lane, towards Katherine Park, there is a footway/cycleway on the south-eastern side of Park Lane (constructed as part of the original Spring Park permission). This footway/cycleway allows for convenient access to the northeast and towards Corsham town centre.

3.4 At the Leafy Lane double mini-roundabout junction, dropped kerb crossing points are provided on all arms and splitter islands on the B3019 Bradford Road arms allows pedestrians to cross one half of the road at a time.

Access by Cycle

3.5 Travel by cycle is most likely to occur to/from Corsham itself, this being the nearest main town. The majority of Corsham lies within an easy cycle of the site.

3.6 Plan 2 shows the locations of existing cycle routes in and around Corsham, with these routes being a mixture of on road, and traffic free-routes. This plan reproduces the information shown on the Corsham Cycle/Walking routes map prepared by North Wiltshire District Council.

3.7 Access by bicycle to the site is via the main vehicular access from Rowan Lane, which in turn is from Westwells Road.

3.8 Cycle lanes are provided on both sides of Westwells Roads between the Park Lane roundabout and its junction with Westwells, these cycle lanes are largely on-carriageway way but sections of shared pedestrian/cycleway allow cyclists to by-pass the Park Lane and Spring Park Roundabouts.

3.9 To the south east of the site a short length (approx. 250m) of on carriageway cycle lane exists between the existing site access and the junction between Westwells Road/Westwells.

3.10 To the north west of the site is a 1.3km length of shared footway/cycleway that runs the length of Park Lane between its junction with Westwells Road and Freestone Way. The shared footway/cycleway is, for the most part, some 3.0m in width though it does narrow to 1.8m in places. This section of footway/cycleway was provided as part of the highway works associated with the Spring Park development.

3.11 At Freestone Way, cyclists would link into the cycleways and identified ‘quiet streets’ that run through the Katherine Park housing estate that route towards the centre of Corsham.

3.12 More information on cycling in general around Wiltshire can be found at;

www.betterbybike.info

www.connectingwiltshire.co.uk/getting-around/cycling/

3.13 Two key sources of information on cycle routes/cycle mapping are;

www.betterbybike.info/maps-and-rides/regional-cycle-maps

www.sustrans.org.uk

3.14 The nearest cycle retailers are located in the centre of Chippenham:

Cycology Bikes
20 New Rd
Chippenham
SN15 1HJ
(01249 461997)

Halfords
Unit 1, Hathaway Retail Park,
Old Road, Foundry Lane
Chippenham,
Wiltshire
SN15 1JG
(01249 445040)

Access by Bus

3.15 The nearest bus stop is 'Basil Hill Barracks' on Westwells Road which is located east of the site, approximately 30m on foot from the existing access junction on Westwells Road. The stop serves the number 10 bus route. This service is operated by Faresaver, and runs 6 days a week. It is a local loop service effectively running from the centre of Corsham, past the site and back to Corsham.

3.16 The service operates from around 07:30 until 18:00 on a weekday, with an hourly frequency. On a Saturday, the service runs from around 08:30 until 12:30, again with an hourly frequency.

3.17 In addition to the bus stop on Westwells Road, there are also stops on Leafy Lane, the 'Rudloe Fiveways' stops, which are approximately 950m distant from the site to the north. The stops are served by the X31 Bath to Chippenham (via Box/Rudloe/Corsham) service, operated by Faresaver.

3.18 The X31 runs 7 days a week, with a typical 20-minute weekday frequency, 30-minute Saturday frequency and 120-minute Sunday frequency.

3.19 The first weekday service runs around 06:30, and the last around 22:30. A journey from Bath to the site would take around 40 minutes, and from Chippenham to the site around 20 minutes. The X31 also provides connections from the site to both Chippenham and Bath Spa railway stations.

3.20 Current timetable information for the services above can be viewed at the traveline website:

www.traveline.info

4 The Promotion and Encouragement of Non-Car Travel

4.1 Ark Data Centres is committed to promoting staff travel to their site by non-car modes where this is a realistically achievable option. Ark Data Centres will achieve this by making staff aware of their travel options, so encouraging a shift towards more sustainable transport modes.

Awareness

4.2 The first key step in ensuring that the Travel Statement will be effective is by making staff aware of Ark Data Centres preference for travel by non-car modes.

4.3 This will be actioned through;

- Use of intranet/internet and email updates as appropriate
- Keeping non-car travel information (bus timetables, cycle maps, etc) in a prominent place such as a communal area or notice board.

Cycle

4.4 The use of cycles for travel can be encouraged through the 'cycle to work' scheme which offers tax-free purchases on cycles and accessories, providing they are used for travel to and from work. Ark Data Centres plans to make this scheme available to staff.

4.5 More information on the cycle scheme initiative is given at:

www.cyclescheme.co.uk

4.6 Most cycle retailers are affiliated with the scheme, and thus can participate in it. The two nearest cycle shops do participate in the cycle scheme.

4.7 Making staff aware of the nearby cycle routes will assist in encouraging travel by cycle. This can be in the form of a 'generic' cycle map (such as those noted at section 3), or, if appropriate cycle maps produced to cater for and give details on the route(s) for a specific employee.

4.8 To encourage travel by cycle to the fullest extent, cycle facilities are planned to be provisioned on site. Staff will be made aware of these facilities. If it is the case that these facilities are used to the point where they are full, Ark Data Centres should consider extending the number of cycle parking spaces they provide.

4.9 Furthermore, shower, changing and locker facilities are planned to be provisioned on-site, for cyclists to use.

4.10 In making staff aware of the health benefits of cycling to work;

- Cyclists can expect to live, on average, 2 years longer than non-cyclists
- Occasional and regular cyclists enjoy a fitness level between five and ten years younger than non-cyclists.
- Cycling as part of daily activities can yield similar physical improvements as specific training programmes.

4.11 Staff will also be made aware that for short journeys in an urban area a journey by cycle can be as fast as a journey by car. Also, cycles are, unlike cars, ideally suited

to short, start-stop journeys in urban areas as they emit zero pollution and cost virtually nothing to run.

Bus Use

4.12 Provide staff with bus time table information as it relates to the nearby bus stops, including where buses travel to/from, frequency and options for ticket travel.

4.13 Make staff aware of the facilities that exist at the nearby bus stops, how staff can get there and how long a journey to a stop would take.

4.14 Ark Data Centres will be as flexible as possible with regards to the timing of staff working hours to coincide with bus arrival/departure times.

Car Sharing and Vehicle Use

4.15 Encourage staff to car share whenever possible; be this either with work colleagues or other individuals travelling in the same area.

4.16 Make staff aware of websites and facilities that are available to help them find a car-sharing partner; www.2carshare.com and that by car sharing, many people can recoup a proportion of their vehicle running costs.

4.17 If practical, feasible or worthwhile, consider allocating car parking spaces to car sharers on a preferential basis – i.e., the most convenient car parking spaces are allocated to car-sharers.

4.18 Educate staff on fuel efficient driving techniques and how to increase their fuel efficiency through load-lightening and ensuring tyres are correctly inflated. Staff can see benefit from this on both a business and personal level.

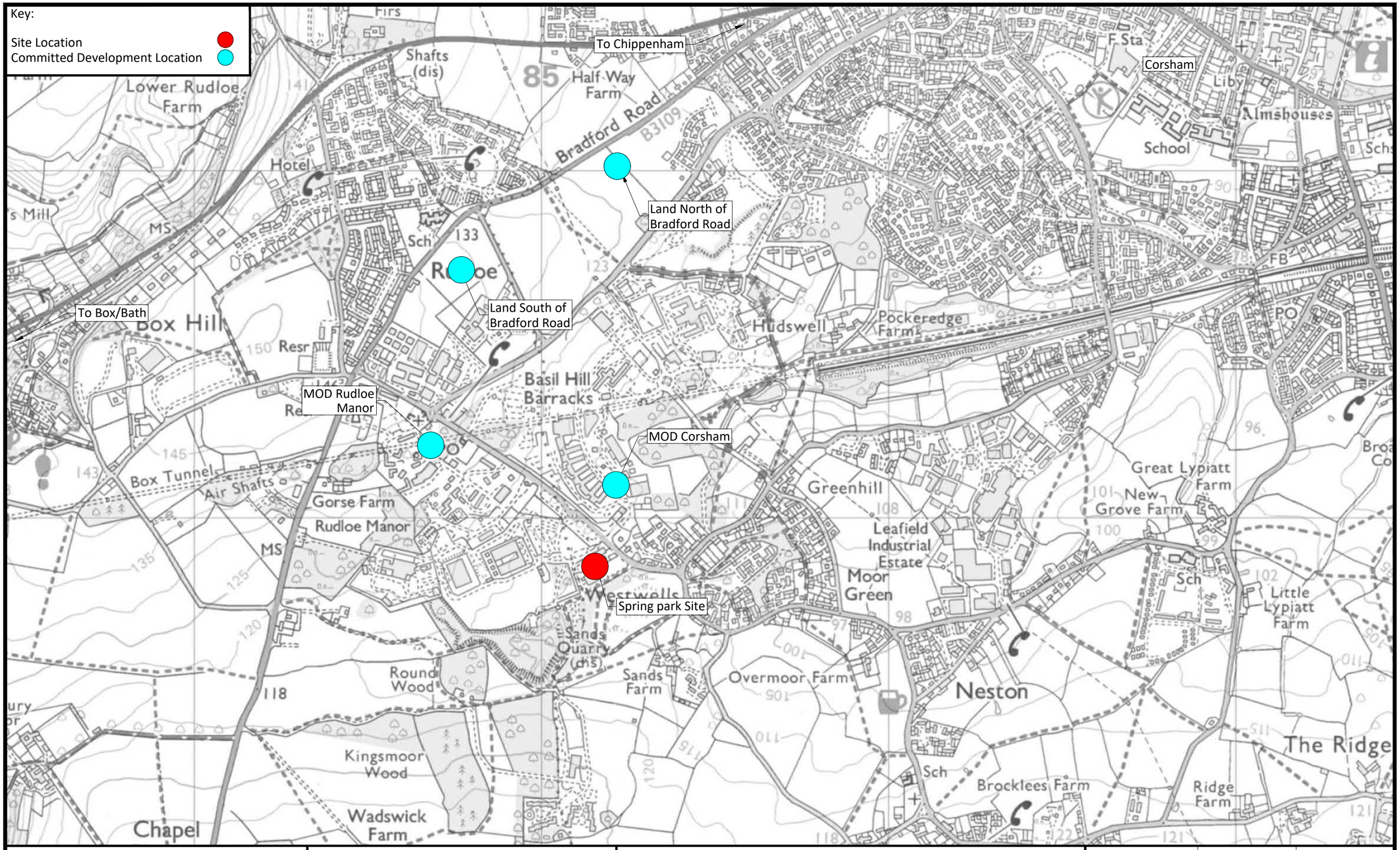
4.19 Look at enrolling staff on a 'fuel efficient driving' course. The knowledge gained in the course can again be used in the work and non-work environment.

4.20 Two electric vehicle spaces are provided within the main car park at Spring Park and Ark Data Centres promote and monitor the use of these spaces. Consideration will be given to increasing the number of electric vehicle parking spaces should demand increase.

4.21 The use of motorcycle/scooters can also be advocated by Ark Data Centres. Motorcycles/scooters can often have lower purchase costs, lower running costs and lower emission levels than cars.

4.22 Ark Data Centres may also wish to review how business travel is catered for. If feasible, fuel-efficient cars can be considered for business trips, or the use of a 'city-car-club' (such as www.citycarclub.co.uk or www.zipcar.co.uk) may be appropriate if trips are cannot be made by any other mode. The use of teleconferencing and video-conferencing can also be investigated to reduce the need to travel.

Plans



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CLIENT:	Ark Data Centres
PROJECT:	Spring Park P5 North + South
TITLE:	TPS - Plan 1 Site Location

SCALE: (A3) 1:10000	CHECKED: SN	APPROVED: SN
CAD FILE: IMA-23-021-006.dwg	DESIGN/DRAWN: MP	DATE: April 2023
PROJECT No: IMA-23-021	DRAWING No: 006	REV: A

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Key

Site Location

Bus Stops

On Road Cycle Route

Off Road Cycle Route

Spring Park (site)

IMA TRANSPORT PLANNING

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CLIENT: Ark Data Centres

PROJECT: Spring Park
P5 North + South

TITLE: TPS - Plan 2
Cycle Routes and Bus Stops

SCALE: (A3)	CHECKED:	APPROVED:
NTS	SN	SN
CAD FILE:	DESIGN/DRAWN:	DATE:
IMA-23-021-009.dwg	MP	May 2023
PROJECT No:	DRAWING No:	REV:
IMA-23-021	009	-

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