

Junctions 8			
ARCADY 8 - Roundabout Module			
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Filename: 12. Hambledon Road_Milton Road Junction.arc8

Path: J:\21834 Woodcroft Farm\004 Transport\Working Documents\Junction Analysis\ARCADY\April 2013 Assessments

Report generation date: 08/07/2013 09:46:46

- » Existing Layout - 2010 Observed, AM
- » Existing Layout - 2010 Observed, PM
- » Existing Layout - 2018 Baseline, AM
- » Existing Layout - 2018 Baseline, PM
- » Existing Layout - 2018 Baseline + Dev, AM
- » Existing Layout - 2018 Baseline + Dev, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
Existing Layout - 2010 Observed								
Arm A	1.18	4.74	0.54	A	0.93	6.26	0.48	A
Arm B	3.85	21.35	0.80	C	0.97	8.39	0.49	A
Arm C	0.77	2.72	0.44	A	1.38	3.42	0.58	A
Arm D	0.18	2.57	0.16	A	1.17	6.32	0.54	A
Existing Layout - 2018 Baseline								
Arm A	1.66	5.90	0.62	A	1.44	8.59	0.59	A
Arm B	22.14	110.60	0.99	F	1.38	11.08	0.58	B
Arm C	0.99	3.11	0.50	A	1.84	4.10	0.65	A
Arm D	0.23	2.80	0.18	A	2.01	9.66	0.67	A
Existing Layout - 2018 Baseline + Dev								
Arm A	1.68	5.98	0.63	A	1.51	9.05	0.60	A
Arm B	52.33	234.53	1.05	F	1.57	12.00	0.61	B
Arm C	1.01	3.12	0.50	A	1.95	4.28	0.66	A
Arm D	0.23	2.81	0.19	A	2.17	10.40	0.69	B

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

'D1 - 2010 Observed, AM" model duration: 08:00 - 09:00
 'D2 - 2010 Observed, PM" model duration: 17:00 - 18:00
 'D3 - 2018 Baseline, AM" model duration: 08:00 - 09:00
 'D4 - 2018 Baseline, PM" model duration: 17:00 - 18:00
 'D5 - 2018 Baseline + Dev, AM" model duration: 08:00 - 09:00
 'D6 - 2018 Baseline + Dev, PM" model duration: 17:00 - 18:00
 'D7 - 2023 Baseline, AM" model duration: 08:00 - 09:00
 'D8 - 2023 Baseline, PM" model duration: 17:00 - 18:00
 'D9 - 2023 Baseline + Dev, AM" model duration: 08:00 - 09:00
 'D10 - 2023 Baseline + Dev, PM" model duration: 17:00 - 18:00
 'D11 - 2023 Baseline + Dev (700 Units), AM" model duration: 08:00 - 09:00
 'D12 - 2023 Baseline + Dev (700 Units), PM" model duration: 17:00 - 18:00
 'D13 - 2018 Baseline + Dev (700 Units), AM" model duration: 08:00 - 09:00
 'D14 - 2018 Baseline + Dev (700 Units), PM" model duration: 17:00 - 18:00

Run using Junctions 8.0.2.316 at 08/07/2013 09:46:42

File summary

File Description

Title	Hambledon Road_Milton Road_Elletra Avenue Junction
Location	Waterlooville
Site Number	12
Date	15/04/2013
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	21834
Enumerator	
Description	

Analysis Options

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

Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Existing Layout - 2010 Observed, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set (s)	Specific Demand Set(s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
Existing Layout	ARCADY		✓	✓	D1,D2,D3,D4,D5,D6		100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Rela
2010 Observed, AM	2010 Observed	AM		DIRECT	08:00	09:00	60	15				✓		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
Hambledon Road_Milton Road_Elletra Avenue Junction	Roundabout	A,B,C,D				7.70	A

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Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Hambledon Road (N)	
B	Milton Road	
C	Hambledon Road (S)	
D	Elletra Avenue	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
A	0.00	99999.00		0.00
B	0.00	99999.00		0.00
C	0.00	99999.00		0.00
D	0.00	99999.00		0.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	6.89	7.40	0.50	8.00	53.00	35.00	
B	3.80	5.00	4.00	48.90	53.00	23.00	
C	6.98	8.63	9.70	72.60	53.00	15.00	
D	5.75	7.86	9.50	53.50	53.00	17.00	

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

Pedestrian Crossings

Arm	Crossing Type
A	None
B	None
C	None
D	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		(calculated)	(calculated)	0.612	1931.272
B		(calculated)	(calculated)	0.555	1408.020
C		(calculated)	(calculated)	0.795	2652.005
D		(calculated)	(calculated)	0.722	2276.207

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	DIRECT	✓	N/A	100.000
B	DIRECT	✓	N/A	100.000
C	DIRECT	✓	N/A	100.000
D	DIRECT	✓	N/A	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 12 (for whole period)

		To			
		A	B	C	D
From	A	45.000	38.000	707.000	110.000
	B	124.000	0.000	435.000	106.000
	C	433.000	257.000	0.000	331.000
	D	71.000	13.000	174.000	0.000

Turning Proportions (PCU) - Junction 12 (for whole period)

		To			
		A	B	C	D
From	A	0.05	0.04	0.79	0.12
	B	0.19	0.00	0.65	0.16
	C	0.42	0.25	0.00	0.32
	D	0.28	0.05	0.67	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 12 (for whole period)

		To			
		A	B	C	D
From	A	1.000	1.000	1.000	1.000
	B	1.000	1.000	1.000	1.000
	C	1.000	1.000	1.000	1.000
	D	1.000	1.000	1.000	1.000

See Junctions 8 for more information on the data used in this report

Heavy Vehicle Percentages - Junction 12 (for whole period)

	To			
	A	B	C	D
From	A	0.000	0.000	0.000
	B	0.000	0.000	0.000
	C	0.000	0.000	0.000
	D	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
A	0.54	4.74	1.18	A	900.00	900.00	69.92	4.66	1.17	69.94	4.66
B	0.80	21.35	3.85	C	665.00	665.00	214.57	19.36	3.58	215.11	19.41
C	0.44	2.72	0.77	A	1021.00	1021.00	45.78	2.69	0.76	45.79	2.69
D	0.16	2.57	0.18	A	258.00	258.00	11.00	2.56	0.18	11.00	2.56

Existing Layout - 2010 Observed, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set (s)	Specific Demand Set(s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
Existing Layout	ARCADY		✓	✓	D1,D2,D3,D4,D5,D6		100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Rela
2010 Observed, PM	2010 Observed	PM		DIRECT	17:00	18:00	60	15				✓		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
Hambledon Road_Milton Road_Elletra Avenue Junction	Roundabout	A,B,C,D				5.22	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Hambledon Road (N)	
B	Milton Road	
C	Hambledon Road (S)	
D	Elletra Avenue	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
A	0.00	99999.00		0.00
B	0.00	99999.00		0.00
C	0.00	99999.00		0.00
D	0.00	99999.00		0.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	6.89	7.40	0.50	8.00	53.00	35.00	
B	3.80	5.00	4.00	48.90	53.00	23.00	
C	6.98	8.63	9.70	72.60	53.00	15.00	
D	5.75	7.86	9.50	53.50	53.00	17.00	

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

Pedestrian Crossings

Arm	Crossing Type
A	None
B	None
C	None
D	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		(calculated)	(calculated)	0.612	1931.272
B		(calculated)	(calculated)	0.555	1408.020
C		(calculated)	(calculated)	0.795	2652.005
D		(calculated)	(calculated)	0.722	2276.207

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	DIRECT	✓	N/A	100.000
B	DIRECT	✓	N/A	100.000
C	DIRECT	✓	N/A	100.000
D	DIRECT	✓	N/A	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 12 (for whole period)

		To			
From		A	B	C	D
	A	29.000	40.000	436.000	31.000
	B	69.000	0.000	301.000	50.000
	C	543.000	794.000	0.000	121.000
	D	124.000	36.000	510.000	0.000

Turning Proportions (PCU) - Junction 12 (for whole period)

		To			
From		A	B	C	D
	A	0.05	0.07	0.81	0.06
	B	0.16	0.00	0.72	0.12
	C	0.37	0.54	0.00	0.08
	D	0.19	0.05	0.76	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 12 (for whole period)

		To			
From		A	B	C	D
	A	1.000	1.000	1.000	1.000
	B	1.000	1.000	1.000	1.000
	C	1.000	1.000	1.000	1.000
	D	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 12 (for whole period)

	To			
	A	B	C	D
From	A	0.000	0.000	0.000
	B	0.000	0.000	0.000
	C	0.000	0.000	0.000
	D	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
A	0.48	6.26	0.93	A	536.00	536.00	54.72	6.13	0.91	54.74	6.13
B	0.49	8.39	0.97	A	420.00	420.00	57.12	8.16	0.95	57.16	8.17
C	0.58	3.42	1.38	A	1458.00	1458.00	82.05	3.38	1.37	82.07	3.38
D	0.54	6.32	1.17	A	670.00	670.00	68.94	6.17	1.15	68.97	6.18

Existing Layout - 2018 Baseline, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set (s)	Specific Demand Set(s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
Existing Layout	ARCADY		✓	✓	D1,D2,D3,D4,D5,D6		100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relative
2018 Baseline, AM	2018 Baseline	AM		DIRECT	08:00	09:00	60	15				✓		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
Hambledon Road_Milton Road_Elletra Avenue Junction	Roundabout	A,B,C,D				29.08	D

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Hambledon Road (N)	
B	Milton Road	
C	Hambledon Road (S)	
D	Elletra Avenue	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
A	0.00	99999.00		0.00
B	0.00	99999.00		0.00
C	0.00	99999.00		0.00
D	0.00	99999.00		0.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	6.89	7.40	0.50	8.00	53.00	35.00	
B	3.80	5.00	4.00	48.90	53.00	23.00	
C	6.98	8.63	9.70	72.60	53.00	15.00	
D	5.75	7.86	9.50	53.50	53.00	17.00	

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

Pedestrian Crossings

Arm	Crossing Type
A	None
B	None
C	None
D	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		(calculated)	(calculated)	0.612	1931.272
B		(calculated)	(calculated)	0.555	1408.020
C		(calculated)	(calculated)	0.795	2652.005
D		(calculated)	(calculated)	0.722	2276.207

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	DIRECT	✓	N/A	100.000
B	DIRECT	✓	N/A	100.000
C	DIRECT	✓	N/A	100.000
D	DIRECT	✓	N/A	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 12 (for whole period)

		To			
		A	B	C	D
From	A	51.000	43.000	797.000	124.000
	B	140.000	0.000	490.000	119.000
	C	488.000	290.000	0.000	373.000
	D	80.000	15.000	196.000	0.000

Turning Proportions (PCU) - Junction 12 (for whole period)

		To			
		A	B	C	D
From	A	0.05	0.04	0.79	0.12
	B	0.19	0.00	0.65	0.16
	C	0.42	0.25	0.00	0.32
	D	0.27	0.05	0.67	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 12 (for whole period)

		To			
		A	B	C	D
From	A	1.000	1.000	1.000	1.000
	B	1.000	1.000	1.000	1.000
	C	1.000	1.000	1.000	1.000
	D	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 12 (for whole period)

	To			
	A	B	C	D
From	A	0.000	0.000	0.000
	B	0.000	0.000	0.000
	C	0.000	0.000	0.000
	D	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
A	0.62	5.90	1.66	A	1015.00	1015.00	97.58	5.77	1.63	97.63	5.77
B	0.99	110.60	22.14	F	749.00	749.00	912.19	73.07	15.20	931.55	74.62
C	0.50	3.11	0.99	A	1151.00	1151.00	58.72	3.06	0.98	58.73	3.06
D	0.18	2.80	0.23	A	291.00	291.00	13.45	2.77	0.22	13.45	2.77

Existing Layout - 2018 Baseline, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set (s)	Specific Demand Set(s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
Existing Layout	ARCADY		✓	✓	D1,D2,D3,D4,D5,D6		100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relative
2018 Baseline, PM	2018 Baseline	PM		DIRECT	17:00	18:00	60	15				✓		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
Hambledon Road_Milton Road_Elletra Avenue Junction	Roundabout	A,B,C,D				7.03	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Hambledon Road (N)	
B	Milton Road	
C	Hambledon Road (S)	
D	Elletra Avenue	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
A	0.00	99999.00		0.00
B	0.00	99999.00		0.00
C	0.00	99999.00		0.00
D	0.00	99999.00		0.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	6.89	7.40	0.50	8.00	53.00	35.00	
B	3.80	5.00	4.00	48.90	53.00	23.00	
C	6.98	8.63	9.70	72.60	53.00	15.00	
D	5.75	7.86	9.50	53.50	53.00	17.00	

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

Pedestrian Crossings

Arm	Crossing Type
A	None
B	None
C	None
D	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		(calculated)	(calculated)	0.612	1931.272
B		(calculated)	(calculated)	0.555	1408.020
C		(calculated)	(calculated)	0.795	2652.005
D		(calculated)	(calculated)	0.722	2276.207

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	DIRECT	✓	N/A	100.000
B	DIRECT	✓	N/A	100.000
C	DIRECT	✓	N/A	100.000
D	DIRECT	✓	N/A	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 12 (for whole period)

	To				
From		A	B	C	D
	A	33.000	45.000	493.000	35.000
	B	78.000	0.000	323.000	50.000
	C	614.000	867.000	0.000	137.000
	D	140.000	37.000	577.000	0.000

Turning Proportions (PCU) - Junction 12 (for whole period)

	To				
From		A	B	C	D
	A	0.05	0.07	0.81	0.06
	B	0.17	0.00	0.72	0.11
	C	0.38	0.54	0.00	0.08
	D	0.19	0.05	0.77	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 12 (for whole period)

	To				
From		A	B	C	D
	A	1.000	1.000	1.000	1.000
	B	1.000	1.000	1.000	1.000
	C	1.000	1.000	1.000	1.000
	D	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 12 (for whole period)

	To			
	A	B	C	D
From	A	0.000	0.000	0.000
	B	0.000	0.000	0.000
	C	0.000	0.000	0.000
	D	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
A	0.59	8.59	1.44	A	606.00	606.00	83.84	8.30	1.40	83.90	8.31
B	0.58	11.08	1.38	B	451.00	451.00	79.89	10.63	1.33	79.96	10.64
C	0.65	4.10	1.84	A	1618.00	1618.00	108.52	4.02	1.81	108.57	4.03
D	0.67	9.66	2.01	A	754.00	754.00	116.43	9.26	1.94	116.54	9.27

Existing Layout - 2018 Baseline + Dev, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set (s)	Specific Demand Set(s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
Existing Layout	ARCADY		✓	✓	D1,D2,D3,D4,D5,D6		100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relatio
2018 Baseline + Dev, AM	2018 Baseline + Dev	AM		DIRECT	08:00	09:00	60	15				✓		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
Hambledon Road_Milton Road_Elletra Avenue Junction	Roundabout	A,B,C,D				60.49	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Hambledon Road (N)	
B	Milton Road	
C	Hambledon Road (S)	
D	Elletra Avenue	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
A	0.00	99999.00		0.00
B	0.00	99999.00		0.00
C	0.00	99999.00		0.00
D	0.00	99999.00		0.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	6.89	7.40	0.50	8.00	53.00	35.00	
B	3.80	5.00	4.00	48.90	53.00	23.00	
C	6.98	8.63	9.70	72.60	53.00	15.00	
D	5.75	7.86	9.50	53.50	53.00	17.00	

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

Pedestrian Crossings

Arm	Crossing Type
A	None
B	None
C	None
D	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		(calculated)	(calculated)	0.612	1931.272
B		(calculated)	(calculated)	0.555	1408.020
C		(calculated)	(calculated)	0.795	2652.005
D		(calculated)	(calculated)	0.722	2276.207

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	DIRECT	✓	N/A	100.000
B	DIRECT	✓	N/A	100.000
C	DIRECT	✓	N/A	100.000
D	DIRECT	✓	N/A	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 12 (for whole period)

		To			
		A	B	C	D
From	A	51.000	43.000	797.000	124.000
	B	140.000	0.000	533.000	125.000
	C	488.000	300.000	0.000	373.000
	D	80.000	18.000	196.000	0.000

Turning Proportions (PCU) - Junction 12 (for whole period)

		To			
		A	B	C	D
From	A	0.05	0.04	0.79	0.12
	B	0.18	0.00	0.67	0.16
	C	0.42	0.26	0.00	0.32
	D	0.27	0.06	0.67	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 12 (for whole period)

		To			
		A	B	C	D
From	A	1.000	1.000	1.000	1.000
	B	1.000	1.000	1.000	1.000
	C	1.000	1.000	1.000	1.000
	D	1.000	1.000	1.000	1.000

Source: TRL Junctions 8 (8.0.2.316) - Junction 12 (for whole period)

Heavy Vehicle Percentages - Junction 12 (for whole period)

	To			
	A	B	C	D
From	A	0.000	0.000	0.000
	B	0.000	0.000	0.000
	C	0.000	0.000	0.000
	D	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
A	0.63	5.98	1.68	A	1015.00	1015.00	98.83	5.84	1.65	98.88	5.85
B	1.05	234.53	52.33	F	798.00	798.00	1788.58	134.48	29.81	1896.79	142.62
C	0.50	3.12	1.01	A	1161.00	1161.00	59.60	3.08	0.99	59.61	3.08
D	0.19	2.81	0.23	A	294.00	294.00	13.66	2.79	0.23	13.66	2.79

Existing Layout - 2018 Baseline + Dev, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set (s)	Specific Demand Set(s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
Existing Layout	ARCADY		✓	✓	D1,D2,D3,D4,D5,D6		100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relatio
2018 Baseline + Dev, PM	2018 Baseline + Dev	PM		DIRECT	17:00	18:00	60	15				✓		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
Hambledon Road_Milton Road_Elletra Avenue Junction	Roundabout	A,B,C,D				7.49	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	Hambledon Road (N)	
B	Milton Road	
C	Hambledon Road (S)	
D	Elletra Avenue	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
A	0.00	99999.00		0.00
B	0.00	99999.00		0.00
C	0.00	99999.00		0.00
D	0.00	99999.00		0.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	6.89	7.40	0.50	8.00	53.00	35.00	
B	3.80	5.00	4.00	48.90	53.00	23.00	
C	6.98	8.63	9.70	72.60	53.00	15.00	
D	5.75	7.86	9.50	53.50	53.00	17.00	

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

Pedestrian Crossings

Arm	Crossing Type
A	None
B	None
C	None
D	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		(calculated)	(calculated)	0.612	1931.272
B		(calculated)	(calculated)	0.555	1408.020
C		(calculated)	(calculated)	0.795	2652.005
D		(calculated)	(calculated)	0.722	2276.207

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	DIRECT	✓	N/A	100.000
B	DIRECT	✓	N/A	100.000
C	DIRECT	✓	N/A	100.000
D	DIRECT	✓	N/A	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Junction 12 (for whole period)

	To				
From		A	B	C	D
	A	33.000	45.000	493.000	35.000
	B	78.000	0.000	341.000	57.000
	C	614.000	898.000	0.000	137.000
	D	140.000	41.000	577.000	0.000

Turning Proportions (PCU) - Junction 12 (for whole period)

	To				
From	A	B	C	D	
	A	0.05	0.07	0.81	0.06
	B	0.16	0.00	0.72	0.12
	C	0.37	0.54	0.00	0.08
	D	0.18	0.05	0.76	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 12 (for whole period)

	To				
From		A	B	C	D
	A	1.000	1.000	1.000	1.000
	B	1.000	1.000	1.000	1.000
	C	1.000	1.000	1.000	1.000
	D	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 12 (for whole period)

	To				
From		A	B	C	D
	A	0.000	0.000	0.000	0.000
	B	0.000	0.000	0.000	0.000
	C	0.000	0.000	0.000	0.000
	D	0.000	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
A	0.60	9.05	1.51	A	606.00	606.00	88.12	8.72	1.47	88.19	8.73
B	0.61	12.00	1.57	B	476.00	476.00	90.84	11.45	1.51	90.94	11.46
C	0.66	4.28	1.95	A	1649.00	1649.00	115.25	4.19	1.92	115.30	4.20
D	0.69	10.40	2.17	B	758.00	758.00	125.40	9.93	2.09	125.53	9.94